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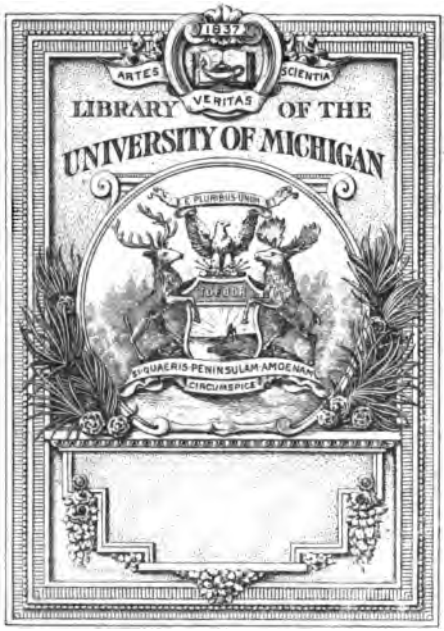
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MANUFACTURERS' ACCOUNTS

A TEXT-BOOK FOR THE USE OF MANUFACTURERS, MERCHANTS, ACCOUNTANTS AND BOOK-KEEPERS.

BY

WILTON C. EDDIS, F.C.A.,

PRESIDENT OF THE INSTITUTE OF CHARTERED ACCOUNTANTS OF ONTARIO, AND AUTHOR OF "THE MANUAL FOR ACCOUNTANTS, CANADA,"

AND

WILLIAM B. TINDALL, F.C.A.

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MANUFACTURERS' ACCOUNTS

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PREFACE

PROBABLY at no time in the Commercial History of Canada, has there been felt a greater need for some practical work dealing with the Accounts of Manufacturers, than at the present and the Authors have endeavored in the following pages to supply this want, not from a theoretical standpoint, but as the result of many years actual experience in several businesses. They have endeavored to treat this important subject as practical Accountants for practical men.

This book is intended to be a text-book for Manufacturers and Accountants, showing how to keep Manufacturing Accounts, both as regards the cost and records of Manufacturing, and also as regards the keeping of the Commercial Accounts where these accounts refer to the cost and profits of such manufactured goods.

In certain processes of Manufacturing, it is both necessary and perfectly practicable to follow the cost of each manufactured article ; but again, in other classes of Manufacturing, it is, if possible, quite impracticable, owing to the immense amount of detail involved to apply the same system of Cost Accounts and obtain satisfactory results. To provide then a system of Cost Accounts, applicable to all factories, it has been found necessary to separate them into two classes ; and in this book, it has been the Authors' effort, to prove that Cost Accounts are not only practicable, but readily applied, and the keeping of such are well worth the small amount of extra Book-keeping.

Besides submitting approved and useful forms for recording the cost of Manufacturing, specimen accounts of varied Manufactories have been worked out and illustrated, and the forms of books which are given in Part III, are such as will be found useful and enhance the value of work as a book of reference for the office.

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PART I.

CHAPTER I.

INTRODUCTION.

How much does the article actually cost us, and at what price can we afford to put it on the market with goods from other countries of a similar nature, is the question the Canadian Manufacturer of to-day is asking his partner or the mechanical expert who superintends his business; and in the following pages we will endeavor to show how the question can best be answered.

In the early days of the country, when the manufacturer had an establishment of a size that he could personally supervise every operation necessary to the making of the article that he was engaged upon, he could tell with a degree of practical accuracy, all that was necessary to enable him to sell at a profit, particularly as the profit obtainable was large and competition not so keen, nor consumer so critical as at the present day. But with conditions changed, and Canada's manufactures being produced by the aid of the latest and most up-to-date automatic machinery and scientific processes, the office must not be one whit behind the machinery, but must be up to date; and the Principal must be sure that the information he receives from his office is accurate, and to be relied upon in every particular.

In determining the price that he can afford to sell an article at, every manufacturer requires to know the following particulars :

(*a*) How much has the labor cost me.

(*b*) How much has the material cost me.

(*c*) How much of my General Expense Account to carry on my business should this particular article pay.

(*d*) How much profit over and above this can I get and place it on the market.

Some will tell the enquirer that this is an easy matter and that they experience no difficulty, that their foreman can accomplish this without any system of book-keeping, and moreover that the cost of getting this information by any system of book-keeping is greater than the benefit derived from it. But the trouble with the estimates of the foreman is, that they are always based on the best that can be done, not on what is done, and are really more the estimates of what the article should cost under favorable circumstances, and not what such articles do and have cost under the existing conditions of manufacture. In such figuring, how often is it that only the aforesaid favorable circumstances are taken into account and the unfavorable, which are never pleasant, lost sight of ?

This might be illustrated practically as follows :—

An estimate is required as to the cost of running a large quantity of hardwood flooring through a planing machine. The capacity of such machine may run from 50 to 80 lineal feet per minute. The foreman will almost invariably err on the side of basing his cost on the best work this machine can turn

out, instead of on the work actually done by it day in and day out, as recorded on his time sheets.

Now, what the manufacturer who is to make a success of his business wants to know is, what did these goods cost me, and does the cost balance my books and account to me for every item of expense in connection therewith.

Then as he finds competition keener and more aggressive, he will have some facts before him which will enable him to come to some determination as to whether he can produce the article cheaper, say by altering the size or cheapening any of the material composing it, or by cheapening the cost of the labor, or reducing his expense account by more economical methods in his factory, or reducing the waste that takes place in the manufacture, or utilizing such waste by putting in improved machinery.

At the outset the authors were confronted with this difficulty, that it seemed almost impossible to design books that would be suitable to all and every kind of manufacturing business.

This difficulty is largely overcome by dividing all manufactures into two classes, the nature of each class being clearly defined. This matter is gone into fully in Chapter III (see page 18), and we believe that if the principles laid down in this work are carefully studied and followed, any good book-keeper can so arrange his books that any special difficulties which may pertain to a particular business can be provided for, and an accurate cost, which will be verified by the books of account, and in one sense form part of them, be procurable at any time.

Before proceeding further, let us define some of the terms we use in discussing this question of cost accounts.

PRIME COST.

To make our meaning of this term clear, we cannot do better than quote from Mr. John Mann's excellent pamphlet "Notes on Cost Records."

"Prime cost is, of course, literally first cost, and I use the phrase to mean the sum expended by a merchant or by a manufacturerer in purchasing what he sells, which may be either a complete article to be sold just in the form in which it is bought, or raw material plus the labor of manufacturing same into a complete article."

In our opinion as to what items are included in the prime cost is a question which must be decided by the management. As, for instance, one manufacturer may own his land and buildings, and may be manufacturing goods of entirely different kinds on the same premises, and for politic reasons may not deem it necessary to apportion a rental to each building, but look upon the whole premises as an investment and expect a certain return on the whole.

Another may rent his premises and also his motive power, and follow Mr. Mann's plan exactly. Who can say which one is right?

COMMERCIAL BOOKS.

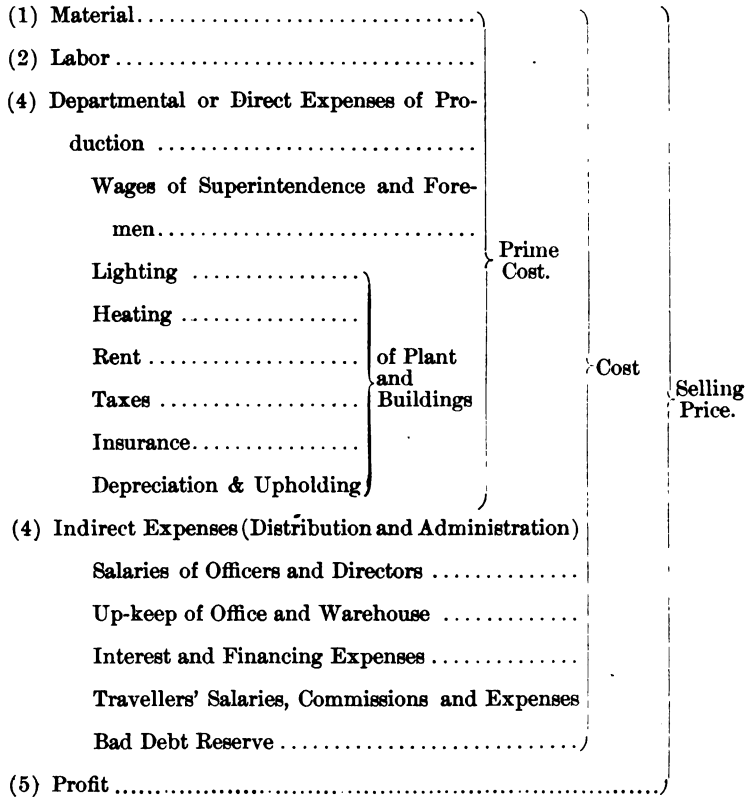
These refer to the ordinary books of account of a manufacturer, such as Cash Book, Ledger, Journal and other books which are used to record his dealings with the public, co-partners or shareholders.

TRADING ACCOUNT.

This is an account shewing the gross profit of a trading concern, that is the difference between the cost of production of goods sold and the proceeds of such a sale.

Mr. Mann divides a manufactured product into its elements as follows :—

ELEMENTS OF A PRODUCT.



CHAPTER II.

REVENUE ACCOUNT.

This is an account into which periodically are closed all those accounts which record the income, and expenses or losses, of the business, whether same have actually been received or paid in cash or not.

The Revenue Account forms an important part or addendum to the Balance Sheet, shewing as it does these particulars; and it should in a manufacturing business be divided into at least three main parts, (viz.): 1st. The manufacturing which shews the cost of the goods manufactured for any determined period, and the component parts which make up such cost. This part is then transferred to the second section, the Trading Account, which includes all the manufactured goods bought, if any, and generally all the sales. This section shews the gross profit for the period. This gross profit is then transferred to the third section, the Profit and Loss Account, which gives the net profit or loss of the business.

This last section includes all the costs of management and also sources of income and expenses not directly belonging to the business and which can if wished be shown in a further subdivision. The same principles apply when departmental accounts are kept.

It is however with the Manufacturing and Trading Accounts more than with the Profit and Loss Account that Cost Accounts come directly in touch ; because as the Merchandise Accounts shew the total cost of merchandise bought, and the value of the merchandise on hand, so does the Cost Ledger shew the cost of the items, making up this total ; and also the value in detail, or on any average basis, of the merchandise on hand and in course of manufacture.

The debit side of the Manufacturing Account can be divided into three main divisions, which are :

(1) Material. (2) Wages. (3) Workshop expenses.

These subdivisions are simply descriptive and can be further subdivided as the nature of the business may require.

(1) Material will naturally cover the cost of landing it in the factory and will include such items as "Freight in" and "Duty."

(2) Wages covers all wages paid to productive workmen, whether it be for piece work or day work.

(3) Workshop Expenses. Under this heading will be included the following items :

Wages of foreman ; wages which may be classified as unproductive and includes such work as cleaning up, etc., oil, etc., for machinery ; repairs and renewals ; power (water, steam, or electrical) ; rent, rates and taxes ; heating ; all expenses incidental to the workshop and primarily caused by the manufacturing processes.

In some factories interest on capital invested in factory or on plant, etc., is here included, but we do not recommend this being charged.

In the former chapter it was explained what was meant by the prime cost of an article, and it can be readily seen that the Manufacturing and Trading Accounts dealt with the prime cost of goods manufactured. A simple form of Account shewing the balance of Manufacting Account transferred to Trading Account is here given.

FIG. NO. 1.—The balance transferred from the Manufacturing Account to the Trading Account represents the cost of the goods manufactured during the period. If proper records are kept of the output from the factory, these can be compared with this cost.

Dr.	MANUFACTURING ACCOUNT.	*Cr.*
To Inventories of Material, etc., at date of last stock taking....	By Inventories of Stores :	
To Purchases, including freight and duty, less returns, allowances, etc.....	Raw Material	
To Wages.....	Partly Manufactured Merchandise on hand	
To Workshop expn's	By Balance transferred to Trading Account.....	

Dr.	TRADING ACCOUNT.	*Cr.*
To Manufacturing Account	By Sales, less returns, allowances, etc.....	
To Manufactured Goods Purchased, including Freight, etc.		
To Balance transferred to P. and L. Account.		
To Inventories Manufactured Goods on hand at date of last stock taking.....	By Inventories Merchandise.....	

Some Accountants and Manufacturers differ as to what should be charged or credited to the Manufacturing Account—as, for example, should the rent of the factory be charged to this account and thus form part of the prime cost or not? What is to be looked upon as prime cost must be carefully considered and decided by the management, and the proper accounts consistently charged.

In Fig. No. 2 is shewn another form of Manufacturing Account which is specially suitable for a factory, where it is practicable to follow the detailed cost of every article manufactured. In this form it will be noticed that the Trading Account is charged with the manufactured goods as received from the factory, and the account is adjusted at the end of the period.

FIG. No. 2.—The output may be valued at its cost obtained through a system of Cost Accounts ; or the output may be estimated at as near cost as possible ; or the output may be charged with a percentage to show a profit to the factory, in this case the balance should be carried to the Profit and Loss Account.

Dr. MANUFACTURING ACCOUNT. *Cr.*

To Inventory stock on hand at date of last stock taking.....					By Output, which is charged to Trading Account as goods are received from the factory.....				
To purchases, including freight and duty, less returns and allowances.....					By Inventory of Mdse. on hand sub-divided into :				
To Wages.....					Stores.....				
To Workshop Expenses.....					Raw Material.....				
					Partly Manufactured Material				
To adjusting Balance to Trading Account..					By adjusting Balance to Trading Account..				

In certain manufactories it is usually only practicable to follow through the cost of the various processes, and note and compare this cost with the product obtained, valued at the selling prices. Especially is this the case where staple lines are manufactured.

There is a further very important reason in almost every business of a manufacturing or simply of a trading nature why a proper and uniform Trading Account should be kept, and it is this: that the relative charges and receipts may be compared on a percentage basis with those of a different period. In most businesses there is a certain uniformity of profit which is obtained on the prime cost; hence one would look as a general practice, apart from any rise or fall in the value of raw material; for a similar ratio of profit to be made on future occasions.

Consequently when a manufacturer does a steady business, one expects to find that the ratio of his gross profit as compared with his sales has not much changed as compared with the previous year. Certainly his workshop expenses will be relatively more or less as his volume of business decreases or increases, but even this can be fairly averaged over a term of years.

It is usual to compare all the items charged to the Trading Account and Profit and Loss Account with the amount of net sales; and if these items are all thus compared periodically in a statistical form, the information thus obtained is not only intensely interesting, but extremely valuable to the management. A good illustration of this may be given in the case of wages and salaries. Supposing the salaries, for example, have fairly maintained a certain percentage for several years as compared with the sales; and the last accounts shew that this

percentage has considerably fallen, what is the inference? It is that the staff have done more work for their pay, and may be entitled to consideration in the shape of increased pay, similarly if the percentage has increased it would show that the staff had been better paid than formerly.

Not only is it useful as just shewn, but it affords a check on the various expenditures in connection with the business, and further enables the Accountant to verify the amount of stock on hand, etc., though with Cost Accounts properly kept this can be checked in a different way.

PROFIT AND LOSS ACCOUNT.—The third part of the Revenue Account is charged with all the expenses of management, interest, rates and taxes, etc., and all costs incurred in selling and distributing the goods.

In some establishments there are often expenses or receipts which do not strictly belong to the business, but are more in the shape of charges or income from investments. When this occurs it is best to enter such items in a third, or supplementary, division of the Profit and Loss Account, which should also contain dividends paid, etc., or profits to Partners' Accounts. Such entries are usually easily verified as to their correctness and need not be included in the percentage statement before referred to.

CHAPTER III.

SPECIAL BOOKS USED IN COST ACCOUNTS AND THEIR RELATION TO THE COMMERCIAL BOOKS.

It cannot be denied, and indeed why should we attempt to do so, that there are many excellent works published on Cost Accounts or Factory Accounts as they are sometimes called. Some of these books treat the subject almost entirely from the factory manager's standpoint, and consequently deal very largely with manufacturing details, which after all are well known to most manufacturers; and on the other hand others are written from the theoretical standpoint, and while possessing excellent and most ingenious ideas, are not practical, and moreover entail too much work. Cost Accounts to be practically useful must be so designed as to be kept either in the office or the factory. Of course where the factory is a very large one and a first-class clerical staff can be set aside for this work, well and good, but this is the exception. And from our own practical experience we have found, that while the materials for these accounts must emanate largely from the factory itself, yet the compilation of them can be generally best done in the office, where the most talented and skilled clerical labor is naturally expected to be found. Otherwise such accounts start well for a week or two, and then not being used, are pronounced

of being no practical good at all, Some remedies to be useful require of obvious necessity to be used. and that according to directions. While these Cost Accounts themselves are kept apart yet they must form an integral part of the commercial books. The Cash Book certainly is an important item in any man's books, and yet it is balanced apart from the other books. A merchant readily grasps at the importance of tracing and accounting for every dollar that comes into his possession—cash is one of his important assets—but he has other important assets that he exchanges his cash for. Whether these assets consist of material, or expenses, or wages, they should be looked after even down to details, because after all they represent dollars and cents.

A certain percentage of every business must be allowed for working expenses. The manufacturer knows that it pays him to employ only first class foremen—some manufacturers have yet to learn that Cost Accounts properly kept are the medium by which they can learn whether the foremen are watching their end of the business. There is an old saying "Quis custodiet custodies," who looks after the guardians? Cost Accounts properly kept are a silent guardian for a business, which cannot be denied.

Still further, these accounts must be so designed that without unduly increasing the clerical work they can be readily balanced in conjunction with the commercial books.

It might perhaps be here explained, and also to make future references in the book clear, that in the Authors' opinion Cost Accounts should be divided into two main classes or divisions, as follows:—

CLASS 1. For Manufacturers whose work is the manufacture of any kind of Machinery and Tools or Articles of special form, the character of which renders it desirable that the cost of each unit of the whole output for a given period should be known and accurately arrived at.

CLASS 2. Industries which turn out goods more or less of one kind for consumption in the state in which they are turned out, such as bread stuffs, textile fabrics and miscellaneous merchandise of all kinds; and also such as are more in the nature of materials for use by factories in Class 1. Generally speaking Class 2 covers such commodities for which it is not so essential to fix the cost of value of each individual unit for any given period, but rather that what is required is cost of processess and average price per yard, pound or ton, as the case may be.

It is the object of this book to try and clearly enunciate the principles underlying the keeping of Cost Accounts, so that any practical Accountant can design and prepare intelligent and useful sets for any factory.

Unfortunately this is a branch of the Accountant's profession that has hitherto received very little attention at their hands. Works on book-keeping are legion. but few of them touch on this subject, or, if they do, the information given is useless.

We show some general forms of books and accounts, which should explain the methods to be adopted. It has been deemed best in shewing these forms to give them in blank, but in later chapters sets are shewn worked out in detail.

As this is not a work on book-keeping, only the special books and accounts required for Cost Accounts are here referred to, and these may be briefly enumerated as follows:—

COMMERCIAL BOOKS AND ACCOUNTS—

Purchase Journals or Invoice Books,
Cost Ledger Account in General Ledger.

SPECIAL BOOKS—

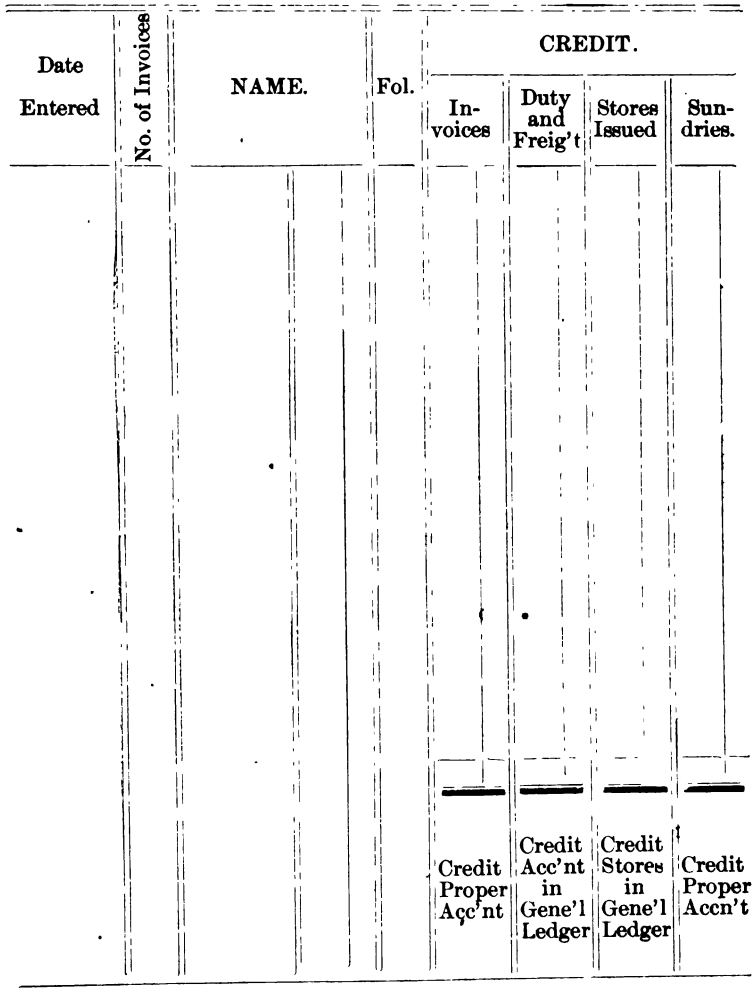
Order Book, or on separate sheets,
Invoice Book,
Estimate Book,
Cost Ledger,
Summary Register.

PURCHASE JOURNAL OR INVOICE BOOK.

In Fig. No. 3 a useful form of Purchase-Journal is given. This book can be adopted for Factories coming under Class 1.

FIG. No. 3.

PURCHASE JOUNAL..



PURCHASE JOURNAL.—Continued.

Date of Invoice	Description and Quantities	CHARGE.					
		Account or Order No.	Cost Ledger		Stores	General Expense	Sundry.
			Works in Process	Factory Exp'n's			
			Charge material account in Cost Ledger account in General Ledger	Charge Factory Expenses in same account	Charge Store account in General Ledger	Charge Account in General Ledger and enter details in subsidiary book	

In certain factories, especially those under Class No. 1, it is most necessary that the "Freight in" and. "Duty paid" on goods should be known and properly recorded on the invoice itself. By using a stamp as shewn in Figure No. 4, and insisting on its being filled up on the invoice before the cashier pays

FIG NO. 4.

Freight		
Duty		
Paid by.....		
Date.....		

the cash for same, much work may be saved in hunting up this information aftewards. The Purchase Journal as here shewn in Fig. No. 3, specially provides for this. When the cashier disburses cash for "Freight in" and "Duty" he charges same to such account or accounts (if it is preferred to separate them) in the ordinary way through his Cash Book. When the invoices are entered in the Journal, the amounts are credited to the "Freight in" and "Duty" column and added to the material and properly charged on the contra side. In due course, presumably at the end of month, the total of the column in the Cash Book is charged to Duty, etc., Account in the General Ledger, and the total of the duty column from the purchase Journal is credited to the same account. If every invoice has been properly endorsed and entered in the Journal as regards the Duty, etc., this account will balance itself, thus proving the correctness of the entries, allowing of course for any items which may be outstanding.

Most book-keepers are familiar with the plan of transferring the balance of the accounts headed "Freight in" and "Duty" to Merchandise Account at the end of the year, but with a system of Cost Accounts, which requires that the true cost of each article should be recorded periodically, it can readily be seen how thoroughly and simply this plan provides for so doing. The Purchase Journal, as shewn, only provides for one department to which goods are to be charged. To subdivide and add additional columns is a very simple matter, but while the use of columnar book-keeping is a great help, it must constantly be borne in mind that its abuse is just the contrary. We saw in a book on "Factory Accounts" one tabulated plan of Journal with no less than sixteen columns. Such a book is an endless source of mistakes, from entering accounts in the wrong column to say nothing of its size, or probably cramped spaces for figures. When a certain number of columns is necessary, and details are required of any heading it is best to record these subdivisions in a separate book or books. An illustration of this can be conveniently shown from Fig. No. 3, under the column headed "General Expense," it is here provided that all goods or expenses coming under this heading shall be entered, and further it is intended that such items shall be posted to a "General Expense Account" in the General Ledger ; but it is not intended that this account shall not be summarised and sufficiently detailed in the Balance Sheet. To provide for this an "Expense Detail Book" as shewn with columns as necessary can be kept written up (see Fig. No. 5) —the total of the columns will give the balance of the accounts in the Ledger ; and moreover a great deal of labor, to say nothing of Ledger space, will be saved in posting.

As a general principle as few General Ledger Accounts should be kept as possible.

By entering up the invoices in the Journal periodically, they can be sorted up, and arranged conveniently for posting.

Column No. 4, of this Journal, Fig. No. 3, it will be noted, is headed "Stores Issued," this column is not used when entering up the invoices, but provides a convenient place for recording goods issued by the store keeper from his stores, and enabling the same to be charged to the proper account; this will be fully dealt with in a subsequent chapter however.

We are giving a somewhat lengthy description of this Purchase Journal, but in reality too much importance cannot be given to the proper treatment of material and stores, and all proper charges incidental thereto. By adopting some such system as here laid down, much valuable information can be permanently recorded. Unfortunately, entries are so often made in books, possibly correct in themselves, but the information which would explain them is either isolated, or was simply a memo., so that when the entry is referred to afterwards, no one can explain it; or endless papers have to be hunted through to endeavor to find out the "raison d'etre."

FIG. No. 5.

"GENERAL EXPENSES" IN DETAIL BOOK.

In this same book can be kept details of all other accounts requiring similar treatment, allowing a page, or pages, for each heading. The addition of the Total Column will agree with the balance of the account in General Ledger. If any credits have to be posted simply subtract amounts. At the end of the year, from this book, a detailed summary of the account can be prepared for the Balance Sheets.

Date	Particulars Where Necessary	Voucher No.	Fo. Subsidiary Book	Fo. General Ledger	Total	Stationery and Printing	Rent and Taxes	Postages and Telegrams	Salaries	&c.	&c.

FIG. No. 6.

MATERIAL JOURNAL.

FACTORIES UNDER CLASS II.

Classifying Quantities and Prices of each item employed in Manufacture—grouped when necessary.

Date	No. of Invoice	From whom bought	Fol.	Total Invoices	Freight in	Detail of Material		Detail of Material		Detail of Material		Detail of Material	
						Weight or Quantity	Amount	Weight or Quantity	Amount	Weight or Quantity	Amount	Weight or Quantity	Amount

FIG. No. 7.

PURCHASE JOURNAL.

For goods other than Raw Material, Factories under Class II.

Date	No. of Invoices	From whom bought	Fol	Credit	Charge.						
				Amt. of Invoice.	Manfd. Goods.	General Expenses	Factory Expenses	&c.	&c.	Sundries.	
										Amt.	Fol	Name of Account

The difference between the Figs. Nos. 3, 6 and 7 can easily be seen. Fig. No. 3 is intended for Factories under heading Class 1, where necessarily much more detail work is involved, and where the details themselves are recorded in a Cost Ledger Account under the particular job or order. Whereas in Figs. Nos. 6 and 7 to be used for Factories under Class 2, where we are dealing with the results and totals instead of individual articles, the information record is more of a general character.

A little examination of the Journal Fig. No. 6, will show that this book provides the means whereby we can readily obtain month by month the total quantity of raw material purchased and its cost, also the quantities of the individual kinds or headings making up this total. In the General Ledger we simply record the Cost of the Material bought for the month, but from this Jonrnal we can find out with little trouble the actual or average cost per lb. or other quantity or unit of each or any line of goods purchased.

Where the Factories come under Class 2, and the processes only are being followed, forms numbered Figs. Nos. 6 and 7 are recommended.

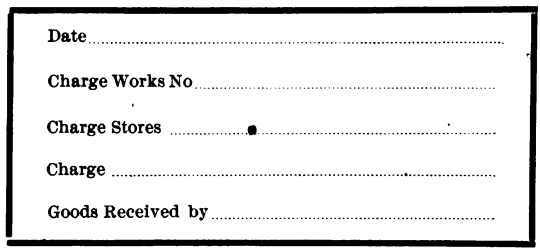
Where there are a large number of invoices it is a good plan to have a numbering stamp and file them away according to their numbers. Experience shews that it is far easier to file away and quickly turn up for reference documents put away in their numerical order, than under their alphabetical order, to say nothing of the fewer pigeon holes or drawers required in doing so. When it is found necessary to refer to invoices it is comparatively little trouble to take a note of their numbers as entered in the Ledger when posting the item ; or have the invoices regularly indexed with No. opposite each name, in the same way as a Letter Book is indexed.

Where invoices require constantly to be referred to, to obtain prices, putting them away in alphabetical order is good, but indexing the names and the numbers of such invoices in a book as referred to above is recommended.

In dealing with invoices in connection with Manufacturing Establishments it is very important that the goods purchased should be charged to proper job or department, or expense, as the case may be ; and to ensure this being properly done and systematically, a rubber stamp or a series of rubber stamps should be provided for.

Fig. No. 8.

SPECIMEN STAMP.



COST LEDGER ACCOUNT.

In Purchase Journal Fig. No. 3, which refers to Factories under Class I, there are two columns headed "Cost Ledger," to which are charged all invoices referring to any special or specific order. The reason for calling this account "Cost Ledger Account" in the General Ledger is simply to avoid confusing it with Merchandise or Manufactured Stock, and further it covers more ground than any simple heading, so we style it as given as a descriptive name.

When material is received into the Factory it is entered in the Journal and charged under heading "Stores" or "Raw Material," except specially ordered as above. Credit Stores and charge Cost Ledger Account through Purchase Journal when Stores are issued. The account also covers other items as will be seen from Fig. No. 9, which is a copy of the account taken from the General Ledger in a simple form. It might be well here to explain the difference between the "Cost Ledger" and the "Cost Ledger Account." The Cost Ledger is a separate Ledger in which are entered in detail all the items which are shewn summarized in the Cost Ledger Account, which is one of the regular accounts in the General Ledger. The term General Ledger is here used, because in business of any size now a-days, where the books are well designed, it is usual to have a Bought Ledger, Sales Ledger, General Ledger, etc.

This Cost Ledger Account then is simply a collection of various Factory Accounts. As each job is finished its record is kept in the Cost Ledger, and monthly or weekly a summary of all completed jobs or of the various processes as the case may be is prepared, and "Manufactured Stock" is charged with the items composing same, and the Cost Ledger Account is credited therewith in its proper columns. This is fully gone into under the explanation given on the Cost Ledger later on.

FIG No. 9 COST LEDGER ACCOUNT IN GENERAL LEDGER

Dr.											Cr.									
Date	PARTICULARS	Folio	Factory Wages	Material	Direct Expenses	Factory Expenses	Total				Date	PARTICULARS	Folio	Wages	Material	Direct Expenses	Estimated Expenses	Total		

Estimate Book.

In an estimate Book the following items of cost have to be provided for :

(1). Material.
(2). Labor.
(3). Proportion of Workshop Expenses.
(4). " " Distributing "

In considering these it has to be decided whether these costs shall be figured on the present year's business, or last year's business, or on an average output taking one year with another. The first would not be satisfactory as the amount could not well be determined until end of period ; but the third is the one that will give the most satisfactory results. Every manufacturing establishment has a normal output, which is generally known as the capcity of the factory or plant, and such is the amount that should be taken.

Porportion of Workshop Expenses.

This is in some Manufactories under Class 1 a most difficult matter to arrive at when starting Cost Accounts. Every Manufacturer has his rule of so much per cent. for profit, but, unfortunately, at the end of the year the profit does not always pan out. In a proper system of Cost Accounts, fortunately, these estimated Expenses can always be verified by the actual Expenses incurred up to any given date, and the information thus obtained utilized for future estimating. Experience has shewn, as a general rule, that the safest plan is to base the Estimated Workshop Expenses on the Cost of Labor. By ascertaining the amount expended on Wages paid for productive labor for any given period, the longer the period the better.

and then ascertaining the amount of the Workshop Expenses for the same period, a ratio between the two can readily be obtained. In other words, the Workshop Expenses will be such and such a percentage of the Wages, and thus a generally reliable guide in estimating this Expense is obtained. As regards the amount of distributing or selling Expenses—these come under the heading more of Fixed Charges, and will not be so much affected by the amount of business done as are Wages or Material used. Again, experience shews that the percentage to be charged for this Expense is generally best obtained by ascertaining from the Trading Account, or from the Commercial Books if a new business, what the ratio of this item is as compared with the material and labor combined, or the ratio can be made with the sales.

In some Factories where Machinery largely takes the place of workmen, and where such Machinery involves considerable outlay, not only in Capital but in Fuel or Power, etc., this running cost of the Machinery should be estimated and considered as so much Wages; this is especially important where the Factory is divided into shops or departments, because one shop may use a large proportion of special machinery as compared with another.

On the other hand, some Manufacturers contend that to apportion this expense on the basis of Wages is unreliable, and say that it should be charged to the machines in use. The total cost of the Workshop or Factory expense is then divided amongst the machines in use. This has to be fixed by the Manager, and in proportion to the time each machine is employed on any job so is the job charged.

This system may, and would, no doubt, work well where all the machines were steadily and regularly employed, and these

charges could be adjusted from time to time as required, but the weak point seems to be, that when machines are lying idle, that certain machines would be overtaxed with their charges. As we have repeatedly said, this is one of the most difficult matters to settle, and each Manufacturer must decide for himself as to the best method for his particular industry.

On the Labor basis, allowing a special charge for special labor saving machines, it seems to us that a more uniform result will be obtained

There has been so much written on this subject, both from the Manufacturer's opinion and the academic point of view, that the Authors have thought it best to simply here give what is conceived to be the most reliable method for general use. Circumstances alter cases, and the individual experience of any given factory may demonstrate that some other course is advisable, nay necessary. For example, in the case of a foundry or broadly speaking, Factories under Class 2, the rule may not always apply. Here the quantity of the product is obtained; the cost of the same, and the amount of Wages expended for the given period. The whole expenses for the foundry for the time in question are then averaged, and with the other items above mentioned constitute the value of the metal or material, which is capable of then being priced at so much per lb. or other quantity. The distributing expenses can then be provided for.

COST LEDGER. FOR FACTORIES, MORE ESPECIALLY UNDER CLASS I.

This is the most important book in Cost Accounts. As the Ledger focuses all the numerous transactions in connection with any person or account, so does the Cost Ledger focus all

the various costs and charges in connection with any job, article or series of articles. One thing must be clearly understood, and that is this, that while the commercial Ledger is a permanent record of transactions and remains in statu quo, on the other hand the "Cost Ledger" has done its work when the job is completed and, as soon as convenient, the account referred to is removed. A little consideration will clearly demonstrate this, for the "Cost Ledger" gives us the details of the "Cost Ledger Account," which is a General Ledger Account. Now, when the goods are transferred to Manufactured Stock Account, simultaneously the corresponding Cost Ledger Accounts are closed. The book-keeper will understand this clearly by the Journal entry.

Manufactured Stock. Dr.
To Cost Ledger Account
as detailed.....

The Cost Ledger should be divided into two parts :

(1) Orders or Jobs.
(2) Factory or Workshop Expenses.

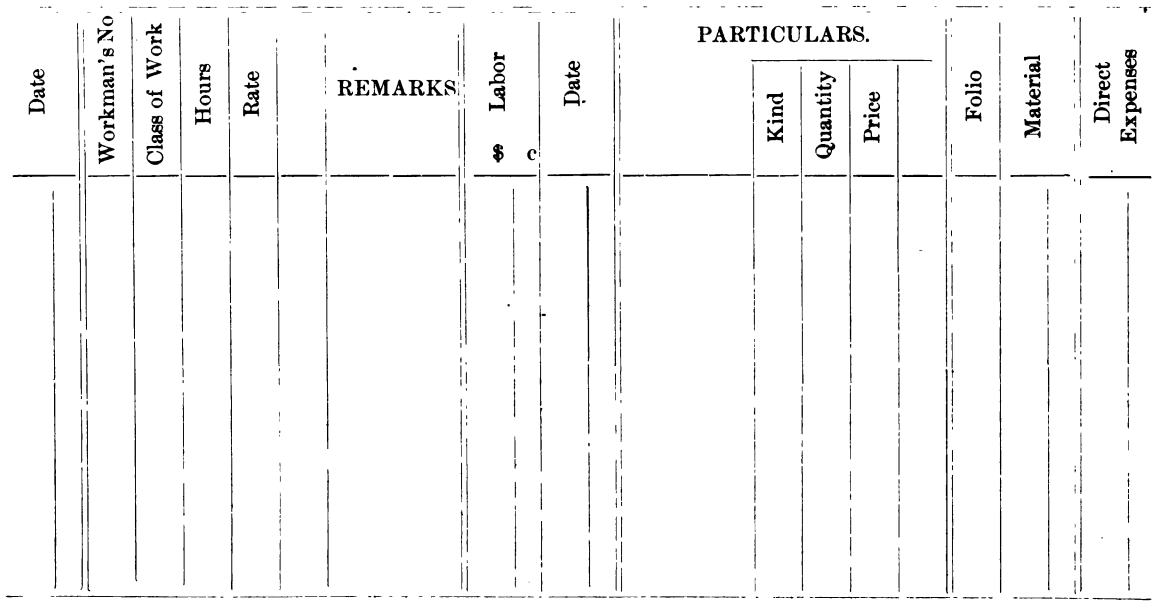
The ruling of sheets in part (1) Orders or Jobs, is shown as follows, Fig. No. 10.

This form clearly explains itself, and the information required is obtained and posted from the vouchers as shewn in the chapters on Material and Wages :—

FIG. No. 10.

COST LEDGER FORM. ORDER OR JOB.

Order No..... Name..... Description Work.....



The ruling for Part 2 Workshop Expenses is shewn as follows:—

Fig. No. 11.

COST LEDGER FORM.

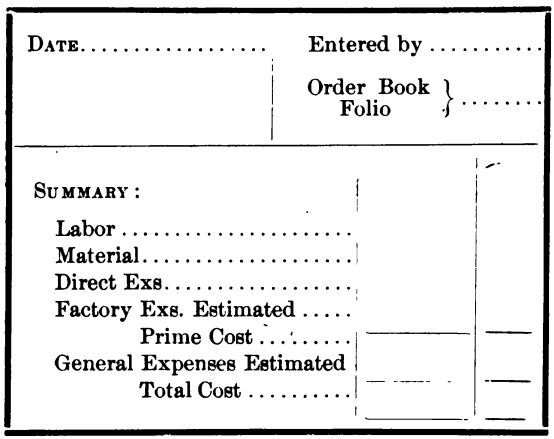
Factory or Workshop Expenses

Date				Particulars	Fo.	Labor	Stores of Material

It will be noticed some of the columns have no heading this provides for details as required, and differing in accordance with the nature of the Factory or Workshop. As mentioned before, all the accounts in "Part 1 Orders and Jobs," are closed when completed.

The voucher system can be well adapted for Cost Ledger Accounts, or perhaps better still a loose Leaf Ledger. When the order is started a sheet printed Cost Ledger, and ruled as shewn in Fig. No 10, is headed with the order number and name, and placed on file for "Orders in course of Manufacture," when the job is finished the account should be stamped as follows, with a rubber stamp :—

FIG. NO. 12.



The details here outlined are to be carefully filled in. The amounts of Wages and Materials are obtained by ruling off and adding up the account itself, and the Estimated Expenses are obtained as previously shewn. The sheet, if kept on a Voucher System, is then transferred to file and marked "Orders completed but not entered in Summary Book." These accounts can be ruled for debits and credits, but the forms shewn are much simpler and answer all the purposes. The fact of stamping the account corresponds in book-keeping with the credit entry, and the transferring same to the second file is keeping

them in suspence to enable the entries for all jobs completed, at end of week or month, to be made in one book keeping entry as is explained in another place.

As regards Part 2 of the Costs Ledger Accounts, viz., Factory Expenses. These accounts are only closed yearly, or at the end of the financial period, but the Ledger itself is balanced monthly and verified with the balance at Cost Ledger Account in the General Ledger, with which, after the completed jobs have been taken out and the book-keeping entries passed, the total balance of the Cost Ledger must agree, if all the work has been correctly posted and recorded.

The transactions in the Cost Ledger as here referred to are those especially of a manufactory where it is necessary to know the individual cost of articles. As before stated it is not always practicable, if possible, to follow this cost right through. When this cannot be done the records are kept of the processes, and a practical illustration of this is given in a later chapter, or only partial records are kept as a matter merely of record.

The difficulty of keeping and closing the Cost Ledger Account in the General Ledger is not such a complicated matter as might appear, as the jobs which are finished at any given date, weekly or monthly, are transferred to the Summary Register.

ORDER BOOK.

This book is used for orders received from customers, also it should be used for any work (or even repairs) order given by the management, so that the cost thereof may be properly recorded. A simple form is shewn in Fig. No. 13, but each Factory usually has some form or forms of its own peculiarly adapted to its wants.

As each order is received it is duly entered and properly numbered. While we refer to this as the "Order Book," and it is here shewn in the illustration in book form, yet we consider that in Cost Accounts the system known as the "Voucher System" already referred to can be very profitably employed. In the Voucher System then the order would be entered on a voucher in duplicate, properly numbered, and then one copy placed on file for "Orders accepted and in course of Manufacture;" when the order is completed it would be filed away with the record of its cost, which will bear the same number. This refers to Factories Class 1.

FIG. No. 13.

ORDER BOOK.

Order No.	Date	NAME AND ADDRESS	PARTICULARS ORDER	Folio Estimate Book	Folio Cost Ledger	Date when Delivered	Folio Sales Book	REMARKS AND SPECIAL INSTRUCTIONS

This "Order Book," for a book after all is only a collection of sheets, should contain all necessary instructions and the fullest particulars compatible with time and space at command, as the Foreman of the Workshops and the Management will constantly require to refer to it. For future reference it will be most useful if properly kept and indexed.

Most factories would find it valuable to index all jobs—not of the names of persons, because the Commercial Books must preforce do that, but the jobs themselves, classifying them as to their class and the parts thereof if necessary. When estimates are being prepared there is nothing so satisfactory or reliable as to be able to refer to a similar job and see, not the estimated cost, but the real cost.

Probably the hardest or most difficult work in the factory is fixing this estimated cost. Unfortunately in too many factories there is no attempt to verify this by the actual cost from proper records kept regularly.

Where it is practicable all estimates should be made by different persons, and the results compared, as many a factory has been ruined from a uniform practice of tendering too low or having too many "leaders."

FIG. No. 14.

MONTHLY SUMMARY OF COMPLETED JOBS FROM COSTS LEDGERS.

Date	No. or Process	PARTICULARS	1 Wages	2 Material	3 Direct Expenses on Job	4 Estimated Factory Expenses	5 Prime Cost	6 Estimated Distributing Expenses	7 Total Cost	8 Selling Price Net	9 Estimated Profit	10 Estimated Loss

THE SUMMARY REGISTER.

This book is ruled as shewn in Fig. No. 14 and the details are entered in their proper columns. As each account is entered in this register, care must be taken that it is duly ruled off and stamped, or placed on separate file, as before provided for in Fig. No. 12.

In dealing with processes the result of the work done is also summarized, – viz., the value of the Material used, the Wages and Expenses.

It is now very clear that by adding together columns Nos. 1 to 4 we obtain the prime cost of all the goods manufactured in the week or month, although for Processes it is only averaged, and can thus easily compute or ascertain the Gross Profit. This Gross Profit can then be compared with the Selling Price or prime cost of the goods manufactured to ascertain its percentage thereto—this percentage thus computed can then be compared with the "normal" percentage of the factory between the same items, as shown in the Trading Account.

Further the estimated expenses from this summary should, as far as possible, be compared with the actual expenses for the period as an interim check on the estimated allowances made. It will be noted that where Processes only are being followed, that the actual Factory Expenses for each shop or department are thereto charged. It is not required to estimate these as we do not necessarily follow the cost of each article.

Where, however, it does become necessary, the proportion would have to be charged on the cost of the productive wages as before shewn. This would principally be necesssary when valuing and making up inventory of partly manufactued stock.

Having added up this Summary Register it now affords some valuable information to the management, enabling them to form some idea of the business done to date and what it has cost.

The next step then is to transfer these manufactured goods to their proper accounts in the General Ledger. The entry which will be made in the Journal is as follows :—

Manufactured Stock Dr.

To Cost Ledger Account.
Wages,
Material,
Factory Expenses (Estimated or otherwise).
Direct Expenses,

After these items have been posted in the General Ledger it is clear that the remaining accounts in the Cost Ledger should balance with the Cost Ledger Account, and that the total of Wages charged in the Cost Ledger to the Unfinished Jobs, and the Factory Expense Accounts should agree with the balance of the Wages columns in the Cost Ledger Account—similarly the " Material " and " Direct Expenses " can be balanced and checked.

At the close of the Financial Period when taking stock it becomes necessary to know the value of the partly manufactured stock.

The Wages and Material have presumably been charged to their respective jobs—to each unfinished job charge its proportion of Workshop Expenses. The summary of these items will give the value of the unfinished goods which should be

journalised to credit of the Cost Ledger Account and afterwards brought down as a debit balance. The Factory Expenses referred to as Part 2 in the Cost Ledger will then be ruled off, and closed through the Summary Register.

The Factory Expenses will then shew

1st—Wages (Unproductive).
2nd—Sundry Expenses.

Now debit Factory Expenses column in General Ledger Account and credit Wages column with the amount of the Wages. It will be noted that in Part 2 of the Cost Ledger there are no estimated amounts to be considered.

What is now the state of the Cost Ledger Account? There is a debit balance at Wages column or account, but if the entries have been properly passed this balance will form part of the goods partly manufactured. This same applies to the Material column and the Direct Expenses column.

We have remaining on the debit side of the account the summary of all the Workshop Expenses, as to this column have been charged, or should have been, all the expenses incurred during the Financial period.

On the credit side we have a summary of these same expenses "as estimated." These columns must be made to balance by a journal entry to the debit or credit of Manufactured Stock Account. A little consideration will shew that if this Estimated Column is too high too much has been charged to "Manufactured Stock" and vice versa.

Further, by noting the difference between these two columns or accounts a guide for future estimating or fixing percentage

of Factory Expenses with wages is obtained unless this difference has been caused by an increase in the business done, or by a falling off thereof.

A fact well worthy of noting in manufacturing is this: that while on the one hand it is safe to estimate your expenses high yet the fear of estimating them too low may lose a contract when forming the Estimate.

It is further to be observed that only the Prime Cost of the Manufactured Stock as in the system here shewn is carried into the Commercial Books; but provision for estimating the total cost periodically is provided for in the Summary Register.

These items can be summarised, viz.: the estimated Distributing expenses or expenses of Management, at the end of the financial period, and referred and compared with the expenses shewn in the Profit and Loss Account, to see how far the Estimates tallied with them.

The method of keeping the Cost Ledger and balancing has been here outlined. Each factory may, and probably will require some special system, although the main principles can be discerned running through the "special system" adopted.

We have attempted right through to explain the different forms, when required, for Factories under classes 1 and 2 respectively.

The objection is sometimes made that it is not worth while going to the trouble of arriving at the cost of certain goods manufactured, as the selling price is usually fixed by the Trade. One answer to this would seem to be, that admitting that selling prices are thus largely regulated, it is most important for the Manufacturer to know which lines pay him best, so as to

know which lines to push the sale of, etc., and further, if he finds he is losing money, or making too little on one line, he can study that line especially with a view to ascertaining whether the cost of making it cannot be reduced, by cheapening it somewhere, or by improved machinery, etc.

Depend upon it the Manufacturer wants to know everything he can, and the more this information can be systematised for him the better for his success.

RESUME OF CHAPTER.

FACTORIES UNDER CLASS 1.

Material charged to Material Account or Stores or Material charged direct to Job, and posted to Cost Ledger Account.

WAGES, CHARGED TO COST LEDGER ACCOUNT.

Productive Wages, charged direct to Job in Cost Ledger.
Unproductive Wages, charged to Factory Exp. or Dept. in Cost Ledger.
Factory Expenses, Estimated as % on Wages charged to Job in Cost Ledger.

FACTORIES UNDER CLASS 2.

Material charged to Stores or Department.
Wages charged to Department.
Factory Expenses charged to Department.

SUMMARY BOOK, provides medium for Collecting Costs and charging same to Manufactured Goods Account.

CHAPTER IV.

WAGES.

The importance of keeping a proper record of Wages needs, or should need, little argument, when one considers what an enormous sum in comparison with other cost of manufacturing is annually expended on this item of the prime cost. In some manufactories, indeed, the item of Wages is heavier than the outlay on the material incurred in manufacturing.

It is not attempted in this book to describe all the various systems of keeping track of attendance or records of work done, as there are so many good ones suitable in accordance with the number of hands employed. Moreover, while of necessity various forms are shewn in suggesting methods to adopt, yet this book professes more to deal with the principles suggested, as leading up to a more perfect system of keeping accounts.

It is comparatively easy to keep records shewing how much each workman has earned during the fortnight, and how much has to be paid. But in addition to this information the Manufacturer wants to know that he has his "quid pro quo" in the shape of value received for the cash he has thus expended.

Wages may be divided into two main classes :

(1) Productive Wages, Time work,
Piece work.

(2) Workshop expenses, or Unproductive Wages,

It will be noted this division follows out the plan observed in the two parts of the Cost Ledger.

When it is possible to have the work done on the piece work principle it is usually and truly considered the better plan. Admittedly it is better both for the master and man, but it requires carefully watching to see that a fair and reasonable wage is thus paid. Some Manufacturers fancy that because the work is so paid for that it requires no check, but, on the contrary, experience shews that the quantities paid for require to be carefully compared and checked with the work ordered.

The register of Wages from which the pay sheet is prepared should separate the names into groups or classes in accordance, as far as possible, with the various shops or processes involved in the work done.

In the Factory Cost Account only one column is provided for Wages, but it becomes a very simple matter to keep a book summarizing monthly this account with its subdivisions as required.

As a general rule keep a summary book for details and departments instead of filling up your General Ledger with an unnecessary number of accounts which entail also a lot of extra columns in the Cash Book, etc.

When the check is drawn for Wages fill up in the stub the amount for each department and the amount of check will be the total.

This may seem a small matter to refer to, but first-class book-keeping consists of bringing into as few headings or accounts as possible the multitudinous transactions of a business, and yet providing for as many detailed particulars being kept for

statistical and other purposes, without involving the book-keeping staff in a lot of extra work. With only a few accounts in the General Ledger, the more quickly will the monthly trial balance be taken out, and the summaries themselves, as referred to, help to check the correctness of the accounts kept.

By recording information in, what may be termed Statistical Book, and then recording this information in a condensed form periodically in the Commercial Book, instead of attempting to pass each entry daily, it will be found that much labor will be saved.

The next step to be observed is that a proper record is kept of the work done by each workman. Forms of keeping this record are shewn in Figs. Nos. 15, 16, 17 and 18. This especially refers to factories coming under Class 1.

FIG. No. 15.

WAGES SHEET—Arranged for a fortnight.

WORKMAN'S No. ..... NAME ..... TOOL .....

ACCOUNT CHARGED AND PARTICULARS	From 5th January, 1901 to 18th January												Hours Total	Rate per Hour	Amount	Fo.
	5	7	8	9	10	11	12	14	15	16	17	18				

FIG. No. 16.

PIECE WORK TIME SHEET.

Fortnight ending 1900

Workman's Name .....

Started ..... at ..... Foreman .....

Order No.	Description of Work	Qu'ntity	Rate	Amount	Time Occupied	Over Time	Total Hours	Remarks

Received ..... Material to make ..... pieces.

Finished as above ..... pieces good.

..... pieces spoiled.

..... Signature of Workmen.

Received as above ..... pieces.

..... Signature Piece Work Clerk.

FIG. No. 17.

DAILY WAGES SHEET.

Form to be used when Time is broken and short times worked on each job.

NAME..... No.....

DATE.....

Time	Order No.	PARTICULARS	No. of Hours	Per Hour	Amount
7.30					
7.45					
8.00					
8.15					
8.30					
8.45					
9.00					
9.15					
9.30					
9.45					
10.00					
10.15					
10.30					
10.45					
11.00					
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3.45					
4.00					
4.15					
4.30					
4.45					
5.00					
5.15					
5.30					
5.45					

FIG. No. 18.

Summary for facilitating posting details into the Cost Ledger when there are several departments and many men employed on each job. When this is the case, instead of posting from the Wages Sheet direct to the Cost Ledger, the items are first entered on these sheets and totals posted to the Cost Ledger.

JOB No. .....

Date	Workman No.	Rate	PARTICULARS	TOOL		TOOL		TOOL	
				Hours	Amount	Hours	Amount	Hours	Amount
			Totals charged to Cost Ledger						

The nature of the work to be done decides the most useful form to use. Form Fig. No. 17 is especially useful when it is required to keep a record of short times employed on jobs—this time is not kept record of in the Cost Ledger in quarters of an hour, but in dollars and cents.

It has been recommended that a record be kept of every workman's time, this especially applies to a job which bears its proper number in Order Book. The job itself may consist of one article, as a machine, or a series of similar articles. Where, however, it is only practicable to keep track of the various processes entailed in turning out a quantity of merchandise, as for example in factories coming under Class 2, such quantity being carefully recorded at given periods or as completed, a simpler method can advantageously be employed. In this case each process is usually carried on in its own particular work-shop, supervised necessarily by the foreman. Fig. No. 19 will show how the labor expended on each process can be systematically recorded.

In this form all the names of the workmen employed in the shops are entered and a record is kept of the hours expended daily on the particular process or, as is more often done, simply of the days.

It often, however, happens that though a man is regularly employed in one shop that his services are required in another department. Should this occur his own foreman can record the time thus employed on the record sheet on which his name regularly appears. To enable this to be done each shop should bear a distinguishing number or letter, and the time marked with the letter following it in the square opposite his name and under the proper date. At the end of the week or fortnight the

work done outside the shop can be charged to the shop using the workman's services. A little arrangement between the foremen readily enables these times to be correctly recorded.

When the Wages are paid the number of hours worked by each workman, or the number of days, as the case may be, should be summarised and compared with the Pay Sheets, which, as before mentioned, should be divided into the shops or arranged as the nature of the factory may suggest.

It does not, however, follow that this system of checking the Wages Sheet can be applied on the day the Wages are paid, but it should be applied as soon thereafter as possible.

FIG. No. 19.

WAGES SHEET. PROCESSES ARRANGED FOR A FORTNIGHT.

Showing the hours worked—or as is often done, the days and aliquot parts thereof.

	Form	Total Hours	Amounts
PROCESS OR DEPARTMENT Names of Workmen			
PROCESS OR DEPARTMENT Names of Workmen			
PROCESS OR DEPARTMENT Names of Workmen			
SUMMARY Dept. 1.....Hours, $ " 2..... " $ " 2..... " $			

There are several points which want to be carefully noted with regards to piece work, but as this is a matter of experience as to fixing values which can only be regulated by the Manufacturer himself, we shall content ourselves with one or two comments thereon. Firstly, then, it is very wise to keep a record of the hours worked on piece work, from time to time, first in one department and then in another, and thus ascertain what the work is costing per hour. This is provided for in Fig. No. 16.

Again, it often happens that too high a price is being paid for the work, and that some of the workmen are purposely working slowly or even short r hours so that this will not be noticed.

Where some of the hands are highly skilled and others inferior, there is a tendency for the smarter ones to regulate their output by the work done by the slower ones. These are matters that want watching, and the experienced Manufacturer will probably realize this only too well. It seems hardly necessary to say that a highly skilled laborer should be encouraged to earn good wages, and that it would manifestly be unfair to gauge the price paid by such a man's earnings.

These records of the labor employed on each job or process should be regularly posted into the Cost Ledger, similarly with the labor employed which comes under the heading of Factory Expenses. In doing this the items can first be summarized if necessary. In the Chapter on the Cost Ledger it is explained how the accounts in this Ledger are closed into the General Ledger.

It is hardly possible, without specializing too much, to provide forms for all classes of factories ; our endeavor is to

enunciate certain principles which by certain modifications can be applied and used in all Cost Accounts.

We cannot close this chapter without referring to the premium plan of paying Wages. The system is this :—Presuming that a workman working on a given machine can turn out 100 articles per day of ten hours, and such a turn out is considered a fair day's work, and the wages are 20 cents per hour, the arrangement is made with him that the profit for all over 100 he can turn out will be divided with him. Thus 100 pieces made in 10 hours=2c. each ; if he makes 150 pieces the Manufacturer has received 50 pieces more than he would under ordinary circumstances, and pays him for 25 pieces at 2c., or 50c. per day, or $2.50 per day for that day instead of $2.00.

CHAPTER V.

MATERIAL.

Under this heading we have to consider how to keep a proper record of all Material and Stores. The quantity that comes in and its cost, then the quantity used in Manufacturing and on account of Factory Expenses, so that at any time we can readily ascertain the quantity on hand, and further, the quantity used in partly manufactured goods. In all large factories it is customary to employ a storekeeper, whose duty it is to look after all valuable stores.

While for the proper keeping of cost accounts, as indeed for all accounts, there is a good deal of detail work, yet there are times when common sense mnst be applied and economy considered. Certain Material may be required to complete a small job, and yet according to the rules of the factory, all Material must be ordered, and the voucher signed by a responsible party—in the illustration here given, to get the order signed, the foreman might be too busy to do so, and the workman would have to wait. Common sense at once points out that it is poor economy to waste valuable time, which represents money, to save perhaps a small value in Material. So in recommending that all stores be under the charge of the storekeeper, it folows that this practice applies more to valuable stores and intrinsically valuable Raw Material. In fact, the nature of the bnsiness must largely govern all regulations. If the Raw

Material consists of gold, a very different supervision is required than when the Raw Material consists of iron. Where the Raw Material is used in large quantities, there is always more or less a percentage of waste, and this percentage can be fairly arrived at by experience.

THE STOREKEEPER'S DUTIES would consist of receiving all goods coming into the factory and verifying the same with the proper invoices. As the goods are received they are entered in his Day Book, which may be compared with a Cash Book. Where such stores are very valuable, such as gold, precious stones, etc., they would probably be under the direct charge of some principal. See Fig. No. 20.

On the left-hand side of this book are entered all the goods received, and on the right-hand side are entered all the goods given out by him.

The storekeeper enters the necessary particulars under the proper headings, and from the entries made in this book the Stores Ledger and Cost Ledger are duly posted up.

The Stores Ledger is simply a ledger wherein accounts are opened as required, keeping a record of the quantities received and given out.

Probably the best way of keeping records of Stores or Material is to use, instead of a Stores Ledger, form shown in Fig. No. 68. Where the storekeeper is kept he arranges these sheets alphabetically on a file, one for each line, and enters in the "in" column the quantities of goods received from his day book, and the "out" column with the goods as given out, the balance showing quantities on hand,

In Factories No. 2 the Material received can be charged monthly from the Material Journal, and the "out" column can be credited as the Material is given out to the department.

When goods are received the particular account is debited, and credited when goods are given out; the balance shews the quantity on hand at any given date, subject to a percentage of waste as before referred to.

This system of keeping track of Stores and Materials is very useful. It is generally found more advantageous to keep record by weight instead of quantities when practicable. An instance of this may be quoted with firewood.

It used to be invariably the custom with Merchants to sell firewood by the cord and keep records by quantity.

Experience shews those Merchants who adopt the system of recording quantities of firewood by weight that it is much better. The same could be illustrated in many ways.

FIG. NO. 20.

STOREKEEPER'S JOURNAL OR DAY BOOK.

MATERIALS AND STORES RECEIVED.							MATERIALS AND STORES GIVEN OUT.						
Date	From Whom Bought	Quantity	Kind	Price	Fo.	Am't	Date	To Whom Given and Particulars	Charge	Quantity	Kind	Price	Fo.	Am't

The item "Stores," of course can be made as expansive as required; it may consist of Merchandise and Raw Material, and further, it will also cover items which, when they are used, may be charged to a Factory Expense Account.

It is also usually the storekeeper's duty to take charge of valuable tools, which are kept check of, by the workman giving his receipt therefor—this receipt may consist of a token with his number thereon.

By referring to the Cost Ledger Accounts, it will be seen that provision is made for charging each job with the quantity and value of Material used in the manufacture thereof. In some cases, for instance in the manufacture of jewelry, which requires careful and highly skilled work, it is comparatively easy, though to record the time may be more difficult, but in other jobs it is often not so easy or advisable to attempt to do so. Supposing that the job consisted of a dozen planing machines—probably in a case like this the best plan would be to weigh or carefully estimate all the parts of one when finished, and then to charge the job with the Material in proportion to the number made.

A further question then arises when Raw Material or Merchandise taken from the Stores comes largely into question, at what cost is to be put in? Raw Material is subject to fluctuation during the year, and consequently if an attempt were made to earmark any particular "lot" and to follow it through into the manufactured goods, we should find that these goods were marked at different prices at different periods.

This would for many reasons be unsatisfactory, and consequently the proper method is to fix the price of Raw Material

from previous experience, at the time being guided by the state of the Market. If Raw Material should be sold direct at a profit, such profit must be recorded at the time of sale.

Unquestionably the successful Manufacturer must know how to buy well, and always watch his Stores Ledger to see what goods want replacing or replenishing, and we find that Manufacturers as a general rule do not find it profitable to buy in too large quantities as it is difficult to obtain an advantage corresponding to the outlay of cash and other risks incurred.

It may not be out of place here to observe that profits made by an increase in values of the Raw Material should not be taken into consideration until the sale is effected. Some Manufacturers seem to like to show a profit to the factory, by buying their goods from the factory at a certain figure instead of charging the goods to Manufactured Stock at what they cost, but we do not recommend this course as a practice. In dealing with factories under Class 2, where goods are turned out in large quantities and in one class as explained in the chapter on Wages, it is only practicable to obtain the cost of the various processes as a general rule. When each manufactured product is completed, a careful record must be kept of the quantity turned out, and its cost ascertained. By keeping records of the Raw Material coming in, the quantities used in the factory and the output, the component parts of the manufactured articles, viz :

The Labor,
The Material,
The Factory Expenses,

can readily be obtained.

The term "output" here used means the work finished by any department in a given period.

In the Chapter on Special Books used, Forms of Purchase Journals were given. As was there mentioned (See page No. 17), Fig. No. 3 is for factories under class 1, where all the Material as it comes into the factory is charged direct to the job for which it was ordered, under the account "Cost Ledger Account," and then entered in the Cost Ledger; or if only Stores it is charged to "Stores Account" in the General Ledger and detailed in the Stores Ledger.

Now for factories coming under heading Class 2, we do not charge the jobs with the Material direct, so we recommend Forms of Purchase Journal Figs. No. 6 and 7.

Fig. No. 6 provides for all the Material purchased being recorded. The total of the invoices will give the total value of the Material bought for the week or month. The totals of the sub-columns will give in addition the details of what the Materials consist of—the total quantity of each kind and cost—the average price per unit of each class can then readily be obtained. Suppose Sugar is one kind of Material bought—it will be bought of various qualities. The addition of "Sugar" columns will give total number of lbs. and cost, when average price per lb. can be obtained. As a general rule when this Sugar comes into the cost of a lot of goods manufactured it will be sufficient to value it at this average price, as just referred to.

Fig. No. 7 provides a Journal for goods other than Raw Material and requires little explanation.

Fig. No. 21 is a record shewing the quantities of "Material used in manufacturing."

This information is obtained from daily or regular report sheets handed in by the foreman of each shop or department.

This daily report shows the quantity of goods manufactured, and the quantities of Raw Material used. The forms to be used must be prepared for the factory so as to be suitable, but they must be as simple as possible. In dealing with workmen, where you want information recorded by them, provide questions to be simply answered. But care has to be taken that the quantities used are not guessed at. The quantities manufactured or the output must be verified by the quantities received into the warehouse—

FIG. No. 21.

MATERIALS USED IN MANUFACTURING.

Entered from Daily Reports handed in by Foreman.

Date	PROCESS OR DEPARTMENT	Raw Material						Manufactured Stock or Worked-up Material		
		Detail of Material Qu'ntity	Do.	Do.	Do.	Do.	Do.	Do.	Do.	Do.
	SUMMARY Column No. 1. Quantity @ $1 Column No. 2. Quantity at $ Column No. 3. Quantity at $ Column No. 4. Quantity at $ Cost of Material used									

FIG. NO. 22.

GOODS MANUFACTURED.

Entered from Daily Reports handed in by Foremen and verified by Storekeeper, or Receipt, etc.

Date	PARTICULARS	Manufactured Stocks or Worked-up Material.				Manufactured Goods.								$ c.
		Detail Qu'ty.	Do.	Do.	Do.	Quan-tity.	Des'p-tion	Quan-tity.	Des'p-tion.					

Fig. No. 22 shewing "Goods Manufactured" is also entered from above daily reports. By carefully adding up quantities in these Journals and posting totals in the Stores Ledger the quantity on hand of any given kind of Material can be readily checked when processes are being recorded.

There is a point here which is worthy of attention and it is this—It often happens that Material has been given out for a special job or process, when a "rush order" comes along. The foreman happens to be short of the Material required, but notices that it is similar to the Material used on a special job above mentioned, which job he stops for the time being, the Material being used for the "rush order." Now care must be taken that the Material is changed to the "rush order" and the former order cancelled, or amount of Material diverted therefrom and deducted from the voucher recording same. Jobs are often twice thus charged with Material owing to changes being made after the vouchers had been filled out.

Where parts are required or Stores wanted for any job or process, a voucher should always be made out for the same, to enable such Stores to be properly charged; such voucher should when practicable, be signed by the foreman or other responsible officer, and it need hardly be mentioned that waste in Material is fatal to big profits. In some factories it is very often observable that Stores are left lying about and consequently later on are lost. Let the men be trained to consider that such Stores are not only a few nails or hammers or nuts etc., but are dollars and cents lying about, and consequently want picking up and putting in their proper place. Again, it is very important to be able to see how your men are working. Take as an illustration the veneering of piano cases. By keeping a record of your veneer you can ascertain the number of cases

turned out from a given quantity. Similarly with leather, cloth, cardboard, etc., unless close watch is kept there are workmen who will waste a large percentage of Material as compared with others. Records once established, as regards quantities used, are expected to be maintained. With Raw Material steadily increasing in price it follows that more and more must the waste be curtailed. A few years ago a little more or less veneer or lumber used was not important, but it is different now.

By the same reasoning our forefathers when manufacturing had large margins of profit to work on, and did not require to figure closely.

Some Manufacturers of old standing seem opposed to keeping records and Cost Accounts, but they are apt to forget that probably their success has been and is largely due to their own marked skill and individuality, and looking after all details themselves.

Modern factories to be successful have to produce in such large quantities that the individual supervision in lieu of written records becomes too costly. It goes, of course, without saying, that the better the foreman is the better work and more profitable will his shop turn out.

When each foreman knows what work his department turns out monthly and the costs thereof, it is an incentive to him, if he is a first-class man, to minimise waste in every direction.

Now, "Time" is as important as Material, in that it must not be wasted, not only with time workers but piece workers. Care not only has to be taken that workers do not waste or idle their time over the work given them, but that there is always work for them to do.

A factory should always endeavor to keep all the hands employed busy.

The following instance will shew how the keeping Cost Accounts acts upon foremen, and the illustration given is an actual fact:

A price had been fixed for making certain articles, upon which a number of girls were working. At the end of the fortnight the management noticed that these girls had only a small amount coming to them. Enquiry was made and it was found that the price paid was fair enough, but that the girls had not sufficient work prepared for them. The management thereupon paid the girls what they considered a fair wage and charged it to the department, thus raising the Cost of the work actually done. The following fortnight there was no difficulty as the foreman had taken care that there was plenty of work given out. We know in a Newspaper Office the call there is at times for "copy."

In concluding this Chapter on Material, the Stores Ledger as recommended is admitted by most Manufacturers to be most useful, but too expensive a luxury. It is strange how men will pay their clerks salaries to keep charge of their cash, but the Materials can lie round with no one in charge of them. If an Accountant were to advise his client that it was unwise to leave large sums of money for everyone to take a few cents when he felt disposed he would be laughed at; and yet when the Accountant urges the importance of exercising a similar vigil over Material and Stores he is met with the cry of "but the expense." The Merchant employs a lad to look after his petty cash and instructs a responsible clerk to carefully check all the lad's receipts and disbursements, and this is quite right, and yet

a man to look after all the Material and Stores used would cost as an expense little more. It would be interesting to note the comparative values of the two interests to the Manufacturer and the amounts to be saved or lost in each respective department.

Depend upon it if the value of the Material was looked after item by item all through the year, as it is looked to in preparing Inventories for the Balance Sheet, when big assets are wanted to help the profits, these profits would be larger and not require such help as writing up the Stores as highly as possible when stock-taking, which is unfortunately too often done.

CHAPTER VI.

FACTORY EXPENSES.

FOR FACTORIES COMING UNDER CLASS I.

In the last two Chapters we have dealt with two important factors in the prime cost, viz., Wages and Material. The third factor is Workshop or Factory Expenses, and the object in this Chapter is to endeavor to explain how this item is to be distributed or apportioned. Whether this cost has to be distributed on a bulk job or to an individual item the principle remains the same, and to enable any cost to be ascertained or any correct estimate made, some basis must be established which is as accurate as possible. If we consider the whole year's expenses there is little difficulty in establishing a percentage comparison with the amount of sales, the value of the Material employed therein or the Wages, but the difficulty arises in making use of the percentage in any single job, because we have to consider that the figures obtained at the end of the year shew the total result and any percentages obtained are only average ones, but none the less useful for purposes of comparison from year to year.

Taking a single job upon which we wish to make an estimate, we have two known factors which we can, by our past experience and statistics recorded, obtain fairly accurately, viz.,

Wages and Material. We have to value this third factor, viz.; Workshop Expenses. Certainly we can get the average percentage from the yearly totals, and we have the choice of then taking the percentage on the Wages or Material, or on both combined. Let us first consider the result when taken from the Material.

Supposing the sales for the period amount to $100,000; the Material $30,000; the Wages paid $40,000; the Factory Expenses $60,000, and the Gross Profit $24,000.

Now the Factory Expenses would be 6% of the Sales.
20% of the Material.
15% of the Wages.

Taking the Expenses ratio upon the Material then in estimating one job—if the Material is valued at $100.00 the Expenses would be $20.00, or 20% on value of Material; the Wages having been calculated at $80.00, the Prime Cost would then be $200.00. Now supposing the same job is being estimated upon, but with a more expensive Material, all the other conditions being the same, viz., requiring no more supervision or labor—say Material costing $200.00, than the Expenses would be $40.00, viz., 20% on value of Material and Labor $80.00—Prime Cost would then be $320.00, instead of merely shewing the $100.00 increase as it clearly should. It requires only a little reasoning to shew that the Material cannot be relied upon as a basis.

We then come back to "Wages" as a basis. The question then arises, should we take the comparison from the number of hours worked or from the value paid. Unquestionably if we could uniformly employ the same class of labor and fixed a

standard, so that we could say the Wages for the year represented so many standard hours, it would be the best, but as things are, with perhaps apprentices working on one job and high-class men on another, it is clear that such a basis would be untrue unless we took the apprentices' time as standard and called some men's time two hours for one of another's, which pould lead to endless complications. The only practicable way seems to be to take the value or cost of the Wages,

Now, comparing above illustrations, we find under Material as a basis :

Material	$100.00	Material	$200.00
Labor	80.00	Labor	80.00
Factory Expenses	20.00	Factory Expenses	40.00
Prime Cost	$200.00	Prime Cost	$320.00

Calculated, however, on what we consider the truer basis we have—

Material	$100.00	Material	$200.00
Labor	80.00	Labor	80.00
Factory Expenses	12.00	Factory Expenses	12.00
Prime Cost	$192.00	Prime Cost	$292.00

The increase in the Cost of the Material does not itself demand an increase in the proportion of Factory Expenses though it must be borne in mind in considering the selling price, as naturally some extra profit is looked for; but what we are considering here are not the profits, but how to arrive at the Prime Cost.

The fixing of a percentage of what is to be charged to Wages is sometimes opposed by Manufacturers on the following grounds: That selling prices of certain lines are fixed by competition or by the Trade generally, and that on these lines, which are usually cheap lines, they cannot charge the same proportion as on other lines which yield a good profit.

Here is an illustration. A firm turns out a number of "goods" which are sold very cheap—in fact, this line of goods is sold at the same low figure by the trade generally,

What do these goods cost?

Material,
Labor,
Factory Expenses.

Now, it is contended that though the labor on these goods is cheap, that the Expenses must not be charged on it at the average rate, as the machinery employed represents only a small amount of Capital as compared with other goods manufactured. Now, of course, we admit that calculating the Expenses at so much per cent. on the labor we are only arriving at an estimated result, but just consider what it means if every machine employed in the factory has to be considered. What calculations would have to be made. Certainly it might be that in certain factories certain modifications have to be made as regards special machinery, and it is very clear that each factory, if it wishes to establish a true basis upon which to fix this important charge—a basis so necessary to know when estimating the cost of a given job—must carefully record these amounts so estimated, and see that their total agrees with the amounts actually expended at the end of any given period. See page No. 44.

Now after all what is the position. The objection is usually only made when considering such lines as the cheap goods already referred to. Supposing after all that these goods must bear their share of the Expense, what are the facts if it is true that they cannot stand being charged with Expenses. They must be summarized as follows :

1st. That these lines are being sold at a loss.
2nd. That possibly this loss is and might be charged to advertising.
3rd. That competition has fixed the price.

It seems reasonable to think that if Manufacturers generally admitted that such cheap goods were being sold at a loss, that they should meet together and establish some basis which would rectify what seems an absurdity.

For one Manufacturer to sell a line at a low figure to get business is comprehensible, but when this becomes the trade price there is no advantage gained by anyone, but on the contrary all are losing money.

Our object in making these remarks is to shew that, because the Prime Cost as arrived at is actually more than the selling price of a particular article, it does not necessarily follow that the method of valuation is incorrect, but it may equally as well shew that that article is being sold too low, or in other words at a loss.

Manufacturers should and always will compete for business, but some method also should be arrived at, so that goods need not be sold below Cost.

The Management Expenses, or as they are sometimes called Fixed Charges, do not vary so much with the sales as do the

Workshop Expenses. There is usually, however, a minimum amount at which these Expenses can be maintained when the factory is running, and there requires necessarily a certain amount of sales to be made if profits are to be satisfactory.

Theoretically the sales are based on the Cost, but in most cases there is a trade price or value which regulates the selling price.

The ratio of Expenses decreases as the volume of business increases, and therefore when business is slack it is often more profitable to increase the sales at a small profit, for the sake of lowering or maintaining a proper ratio of Expenses on the business done.

On much the same line of argument do the departmental stores slaughter the remainder of a line of goods, when sufficient has been sold to return a fair profit on the outlay or Cost.

This is admittedly a most difficult question in Cost Accounts, viz., that of correctly distributing these Expenses In some trades the method recommended would not apply at all, and the proper ratios to adopt would have to be ascertained by a series of experiments, and from the Cost Sheets themselves for a given period, until the proper average for the particular business has been ascertained.

FOR FACTORIES COMING UNDER CLASS 2.

Under this class there is little difficulty as all that has to be done is to charge these expenses for the period being dealt with.

Under the Chapters on Wages and Material we saw how to find out the Wages paid and the Material used for the period, so if we add to them the Expenses for the same period, we obtain

the Prime Cost of the "Goods Manufactured." It of course may be necessary to adjust and allow for partly manufactured goods, but for the purposes of the monthly statement, the actual output of goods completed will often suffice, as the average results thus obtained would be sufficient guide and afford information which would shew the Manufacturer if the returns were satisfactory or not.

PART II.

CHAPTER VII.

COST ACCOUNTS FOR BOILER AND ENGINE MANUFACTURERS AND CONTRACTING ENGINEERS.

FACTORY COMING UNDER CLASS I.

We have chosen in this Chapter the business of Manufacturing Engines, special Machinery and Boilers, as probably being better adapted for the purposes of illustration than some others. We are not attempting to present a full set of accounts, shewing both Commercial Ledger and Cost Ledger, with Trial Balance and Final Balance Sheet and Profit and Loss Account, as the space allotted will not admit of our going so fully into the accounts.

We therefore will only take up the main, and what appear to us the most important books and Ledger Accounts, and endeavor to shew how they are affected by the various entries made, and also illustrate by them the application of the principles laid down, and try to shew how easily they can be adapted to any manufactory coming under Class I.

Some argue that a system of Cost Accounts means disarranging the present books, and general inconvenience all round while they are being introduced. That this is not so we will illustrate as follows :

Take Fig. No. 23 as being the Balance Sheet of the Manufacturer in question.

INDUSTRIAL WORKS, TORONTO.

J. AINLEY, Proprietor.

Balance Sheet, 31st December, 1901.

For convenience of reference each item on this Balance Sheet has been numbered, and we have also put in as few accounts as possible, and have assumed that the Manufacturer had plenty of capital and neither gave nor received promissory notes.

The Balance Sheet shews the accounts as they would appear at the beginning of the trading and manufacturing period. Assuming, then, that this Manufacturer had hitherto kept no Cost Books and now desired to, the first step to be taken is to transfer to the Cost Ledger the unfinished Manufactured Stock—item No. 8 on Balance Sheet, detailed as followed :

Labor	$4,742.00
Material	4,070.00
Expense	1,188.00
	$10,000.00

FIG. NO. 23.

BALANCE SHEET 31st DECEMBER, 1901.

LIABILITIES.				
Creditors, on Open account		1		14,000
" Wages due		2		1,800
Revenue account, Provision for bad and doubtful debts		3		300
				1,000
Thomas Ainley, Personal account				145,575
" Capital account		4		
ASSETS.				
Cash on Hand, Petty Cash	25			
" Office	150			
" Bank	5,000		5,175	
Debtors, Open account		6	15,000	
Stores, Material all kinds		7	8,000	
Partially Completed Work		8	10,000	
Finished Stock		9	1,000	
Freehold Land	$15,000	12		
Buildings thereon	25,000	13		
Plant and Machinery	75,000	14	115,000	
Patent Tubular Boiler, 5 years to run		15	5,000	
Patterns and Drawings		16	3,000	
Office Furniture		17	500	
			$162,675	$162,675

We will first open an account in our Commercial Ledger and call it "Cost Ledger Account," using the form shewn in Fig. No. 9.

We will further assume that these jobs have been properly entered up in the Cost Ledger. We have not shewn these entries in detail, as it will be sufficient to follow one order right through as an example, and then show how the various books are closed, summarised and finally brought into the Financial Statement.

The business carried on in establishments of the kind we are about to discuss, is the building of Stationary and Marine

Steam Engines of all types, Steam Boilers of all kinds, and Machinery for any special purpose desired. Machinery of this kind, especially if of large size, is not kept ready in stock, but is usually built to order, in accordance with plans and specifications furnished by the buyer in some cases, in other cases they may be furnished by the engineering firm tendering for the building of the Machinery desired.

We will then pass a Journal entry :

Cost Ledger Account Dr. $10,000.

Wages $4,742
Material 4,070
Expense 1,188

To Cr. partially completed work $10,000

In order to close the latter account as opened in the Manufacturer's Ledger.

See Balance Sheet, Fig. No. 23

The "Order" then we propose to deal with is as follows :—

Mr. J. Williams has ordered an Automatic Vertical Engine, 5 x 6, particulars of which are as under :

> Automatic Vertical Engine, 5 x 6 cylinder 5 in diameter, 6 inch stroke, cylinder lubricator, all oil cups and wrenches, governor and pulley fly wheel, completed as per specification No. X.

The next diagram, Fig. No. 24, will shew the order No. duly entered up in the Cost Ledger, it having been completed. Instead of following up the order step by step through the various shops, we have chosen to take it at this stage, and refer back to its component parts or costs snfficiently in detail to make the whole process clear.

Well, then, from the account before us we find that it is divided into three main parts, two of which, Labor and Material, are posted up from other sources, and a third part, Workshop Expenses, which is estimated upon the amount of the Cost of the Labor upon the job.

FIG. No. 24.

COST LEDGER—FORM.

Order No. 260. Name J. Williams. Description Work....

Date.	Workman No.	Class of Work	Hours	Rate	REMARKS	Labor $	Labor c
1902			450½		Forward	95	46
Jan'y 9	38	F.	2	15			30
	41	L.	2	9			18
	47	H.	3	12½			37
	64	Dgs.	1	15			15
	79	F.	30	20		6	00
						102	46
					Summary Labor.		
					Patterns..70 hrs. 14.98		
					Drawings 32 " 4.29		
					Lathe... 191 " 48.19		
					Forging. 29½ " 9.89		
					Fitter.....91 " 18.05		
					Helper ...75 " 6.96		
					488½ $102.46		

COST LEDGER—FORM—Continued.

Date		PARTICULARS					Material		Direct Expenses	
		Particulars	Kind	Quantity	Price	Fo	$	c.	$	c.
1902		Frames, Chest, Corner,	Cast			P.I				
Jan'y	3	Base, etc.	Iron	1026	2¼	1	23	03		
		Fitti'gs, Lubricators, etc.	Brass				5	98		
	5	Bearings	Brass	9½	15		1	43		
	8	Wrougnt Iron Crank Shaft	W. Iron Mac.	88	1 50		1	32		
		Cor. Rod	Steel	20	2½			63		
		Nuts, Cap Screws	Cast Steel	3	12½			37		
		Babbit					4	45		
							37	21		

SUMMARY.

Labor	$102 46
Material	37 21
Factory Expenses, at 25% on Wages	25 62
Prime Cost	165 28
Distribution Expenses, at 25% on selling price, $225.00	6 75
Total Cost	172 03

FIG. No. 25.

WAGES SHEET—Arranged for a fortnight.

WORKMAN'S NUMBER—79. NAME—James Wilson. TOOL-FITTER.

ACCOUNT CHARGED AND PARTICULARS	From 5th January, 1902, to 18th January, 1902.												Hours Total	Rate per Hour	Amount	Fo.
	6	7	8	9	10	11	13	14	15	16	17	18				
No. 260.....	10	5	5	10									30	20c.	6 00	
No. 288		5	5		10	10	10	10	10	10	10	10	90		18 00	
	10	10	10	10	10	10	10	10	10	10	10	10	120		$24 00	

LET US FIRST TRACE BACK THE "LABOR."—Fig No. 25 is a copy of James Wilson's Time Sheet No. 79, from the 5th January, 1902, to 18th January, 1902. We note from this sheet that during this period he worked constantly on two jobs, No. 260 and No. 288, and therefore against these two jobs must his Labor. 30 hours, costing $6, and 90 hours, costing $18, be respectively charged.

On referring to Fig. No. 24 Wilson's work will be seen duly charged to Order No. 260, being the last item posted to Labor, the other items having been duly posted from other workmen's sheets,

If this order had been a heavy one, instead of posting the Labor direct from these workmen's sheets we should have first summarized them on forms, as shewn in Fig. No. 18, and referred to in a former Chapter.

The reader will observe that Mr. William's Order is always referred to as No. 260. This should always be done, not only for convenience, but because it is not expedient that the employees should know more than is necessary about the work they are engaged on.

When all the charges against Labor are entered it is useful to summarize the details for future reference, and to show that job is finished. This is done in the Cost Ledger Account. Again we refer you to Fig No. 24.

If it is desired to keep cost of the Machine and its parts, including patterns and drawings, they would be referred to as 260p., 260d., 260/1, 260/2, 260/3, which would mean 260p., standing for No. 260, patterns and so on, and the numbers referring to each part of the Machine as numbered on the

Working Drawings. If the Machine is one not likely to be made again this item, "Working Drawings," is charged to the cost of the Machine; or if for Machinery that is likely to be duplicated, half cost goes to first Machine, and the other half cost is charged to patterns and drawings, and carried to the Balance Sheet as an asset subject to depreciation.

MATERIAL.—Having shewn how the Labor has been recorded against this Order No. 260, we will next see how the amount of $37.21, charged against Material, has been arrived at.

First of all we will reiterate what has already been referred to in Chapter on Material, that all Material and Stores coming into the factory must be carefully entered into the Purchase Journal. By reference then to Purchase Journal, Fig. No. 26, we shall see where any material specially ordered for this job is entered, and we find there item $23.03.

It will be observed that Fig. No. 26 is a reproduction of Fig. No. 3 filled in to suit this particular business, though this form could be considerably changed, yet the principle maintained, which is to so keep the accounts that all the items of cost, viz., the labor, the material and the expenses of production are duly charged to the articles manufactured.

In most factories it is found convenient to sub divide into departments or shops, and where this is the case a record must be kept of the work done in each department, so that the management can exercise a proper supervision. In the General Ledger it is not necessary to keep notes of these departments, nor even in the Subsidiary books, such as the Cash Book or the Purchase Journal. Let us suppose then in this order No. 260, which we are looking into that it has passed through several

shops. As regards the Prime Cost of this order it is not important to know what shops it has passed through, and so we refer to the Cost Ledger Account for the information on this point, as is shewn in Fig. No. 24, page 89. The Summary Register shewn in Fig. No. 28 gives us the result of the work as a whole. The best way then of keeping the records of the departments is through a distributing book, the total columns being made to agree with amounts posted in the General Ledger Account, whether for Wages, Material or Expenses. Referring back again to Fig. No. 26, the Purchase Journal, the items there entered are supposed to represent the transactions of this particular manufacturer for a period of six months, and although they are here given in totals, in actual practice they would be entered daily and each individual account credited with total of invoices bought.

The item $1,737 65 credited to Stores issued is charged $1,624.65 to works in process and $113 to Factory Expenses, and is a simple Journal entry passed through this book for convenience. When Stores are bought, except specially ordered for some particular order, they are charged to Store Account or some similar account as has been before explained; but when Stores are used on account of works in process and so recorded in Storekeepers' Journal, an Entry or Entries similar to one above are passed and Stores account duly credited.

FIG. No. 26.

PURCHASE JOURNAL.

Date Entered	No. of Inv.	NAME	Folio	Credit		
				Invoices	Duty and Freight	Stores Issued
1902 Jan'y 8	1	A. B. & Co		23 03		
June 30		Six months' transactions shewn in total				
		Taken out of Stores				1,737 65
		Purchases		7,900 00	800 00	
				$7,923 03	$800 00	$1.737 65
				Credited in proper Accounts	Credited Account in General Account	Credited Stores Account in General Ledger

PURCHASE JOURNAL.—*Continued.*

Date of Invoice	Description and Quantities	Acc'nt to be Ch'g'd	Charge.			
			Cost Ledger		Stores	General Expenses
			Works in Process	Factory Expenses		
1902 Jan'y 1	Frames Chest, Corner Base etc., Cast Iron, 1023 lbs@ 2¼c	No 260	23 03			
	Charged Sundry Accounts, Works in Process, etc.		1,624 65	113 00		
	Do. Do. and other Accounts		4,800 00	602 00	3,200 00	98 00
			$6,447 68	$715 00	$3,200 00	$98 00
			Charged to Material accounts in Cost Ledger Account in General Ledger.	Charged Factory Exs. in same Account.	Charged Stores Account in General Ledger.	Charged General Expense Account and detailed in Subsidiary Book.

FIG. No. 27.

STOREKEEPER'S JOURNAL.

MATERIALS AND STORES RECEIVED.							MATERIALS AND STORES GIVEN OUT.							
Date	From Whom Bought	Quantity	Kind	Price	Fo.	Am't	Date	To Whom Given and Particulars	Charge	Quantity	Kind	Price	Am't	
							1902 Jan. 3	Fittings, Lubricators, etc.	No. 260		Brass		4	98
							" 5	Bearings	260	9½	do	15	1	43
							" 8	Wrought Iron Crank Shaft	260	38	W. Iron	150	1	32
								Cor. Rod	260	28		2½		63
								Nuts, Cap Screws,			Machine Steel			37
								Babbitt	260				4	45
								In this column would be entered particulars shewing who received the goods as per order card, and what shop or dept. he was working in						

The other items are taken out of Stores and Stores Journal, Fig. 27 will show items referred to being for Material used in Order No. 260.

At the end of the month or week the total value of goods given out will be entered in Purchase Journal to the Credit of Stores and Debit of Cost Ledger Account, thus the items in Order No. 260 will pass through this Journal, but not in detail, as they are only there entered in detail when specially ordered and charged direct. Of course, when the Invoices are entered in this Journal care has to be taken that they are properly marked, and Invoices for goods or materially thus specially ordered would not be entered by Storekeeper in his Journal, or if they were, would only be entered short as a record, as he is not charged with such materials, though they might pass through his hands.

Where there is no Storekeeper, records of Stores should be kept, and also a book shewing the Stores and Material to be charged to Cost Ledger Accounts and credited to Stores Account. These entries, it will be noted, are dependent of, though they are in harmony with the postings of the Commercial Books.

Further, we have not shewn how the quantities, etc. used in this Machine have been arrived at. These are matters of detail which practical knowledge and the facts to be looked after will determine.

The main points in regard to Material are to see that prices are correct, extensions correct, and also weights and quantities.

As regards the Machine Shop, there is not much danger of Material charged to one account being used for another, as the principal Material is cast iron moulded to distinct patterns or

forms. But in the Boiler Shops, steel plates might be used on one that had been charged to another ; but a little watchfulness on the part of the foreman or clerk having this in charge will probably keep this in check.

Care must be exercised to see that more Material is not received by the foreman of any department than is really required for the Order No. to which it is charged. The effect of this is to probably cheapen the cost of some other article by the surplus being used on it, and not charged to it, as for instance say that 100 lbs. of ¼-inch round iron was charged to No. 85, and only 50 lbs. used leaving 50 lbs. and that this 50 lbs. was used in No. 105. The 100 lbs. having been charged to No. 85, and the 50 lbs. used on No. 105 not being charged to it, both will shew false cost.

Difficulty may be experienced in charging goods from Stores that have been purchased at different times and at fluctuating prices. If there is much of this the best way usually is to take an average price for the period of purchases. Say bar iron has been purchased for 6 months, and after examining invoices you determine that 25% of purchages were at $1.75 per 100 lbs. 50% at $2.co, 20% at $2.25 and 5% at $3.00. Then take 1,000 as a basis and figures as follows :

250 lbs.	at	$1.75—	$ 4.87
500 "	"	2.00—	10.00
200 "	"	2.25—	4.50
50 "	"	3.00—	1.50
1,000 lbs.			$20.87

therefore, $2.08 per 100 lbs.

Turning again to Cost Ledger Account, Fig. No. 24, Order No. 260, we find the job completed, and costs thereof summarised at foot, shewing Cost of Manufacturing same to be $165.28.

Every order as it is completed is treated similarly.

At the end of each month all these completed orders are entered into the Monthly Summary Register. See Fig. No. 28, which shows Order No. 260 duly entered therein.

FIG. No. 28.

MONTHLY SUMMARY.

				1	2	3	4	5	6	7	8	9	10
Date	No. of Process	PARTICULARS		Wages	Material	Direct Expenses on Job	Estimated Factory Expenses	Prime Cost	Estimated Distributing Expenses	Total Cost	Selling Price, Net	Estimated Profit	Estimated Loss
1902 Jan 8	260	J. Williams Automatic Vertical Engine		152 46	37 21		25 61	165 28	6 75	172 03	225 00	52 97	
June 30		Total of work done for six mos. shewn in detail in practical work		10,551 19	9,239 33	298 38	2,652 80	22,791 70	805 57	23,596 97	26,852 57	3,479 51	223 91
				$10,703 65	$9,276 54	$298 38	$2,678 41	$22,956 98	$812 32	$23,769 00	$27,077 57	$3,532 48	$223 91
							25 p.c. on wages		3 p.c. on sales				

The remaining figures in the Monthly Summary are entered in one amount, and are supposed to represent six months' work. In actual practice they would be entered separately. Similarly the other entries are posted in the books as six months' work.

Now, to close this Monthly Summary and transfer amounts to the Commercial Books.

The addition of Columns 1-4=Total of Column 5.

Columns 6-10 are intended for the inspection of the Heads of the Firm, consequently this book should be written up by a confidential man.

Assuming this book to be added up, we pass the following entry through Journal :

Manufactured Stock Dr. $22,956.98.

To Cost Ledger Account, $22,956.98.
as follows :

Wages	$10,703.65
Material	9,276.54
Direct Expenses	298.38
Estimated Factory Expenses	2,678.41
	$22,956.98

Reference to the Cost Ledger Account in the General Ledger, Fig. No. 29, will shew these entries duly posted.

FIG. No. 29.

COST LEDGER ACCOUNT IN GENERAL LEDGER.

Dr.

Date	PARTICULARS	Fo.	1 Factory Wages	2 Material	Direct Expenses	3 Factory Expenses	4 Total
1901 Dec. 31	To Inventory—Partly Manufactured Orders		4,742 00	4,070 00		1,188 00	10,000 00
1902 June 30	" Totals for 6 months, taken from Purchaser's Journal			6,447 68		715 00	7,162 68
	" Totals taken from Cash Book, which is not shown, as it does not present any special features		8,672 90		298 38		8,971 28
	" Wages (unproductive) charged to Factory Expenses and credited per contra					1,211 25	1,211 25
			$13,414 90	$10,517 68	$298 38	$3,114 25	$27,345 21
1902 June 30	To Inventory—Incompleted work		$1,500 00	$1,241 14		$375 00	$3,116 14

COST LEDGER ACCOUNT IN GENERAL LEDGER.

Continued.

			5	6	7	8	Cr.
Date	Particulars	Fo.	Wages	Material	Direct Expenses	Estimated Expenses	Total.
1902 June 30	By Totals posted from Summary Book		10,703 65	9,276 54	298 38	2,678 41	22,956 98
	" Incompleted work		1,500 00	1,241 14		375 00	3,116 14
	" Factory Expenses		1,211 25				1,211 25
	" Manufactured Stock Account					60 84	60 84
			$13,414 90	$10,517 68	$298 38	$3,114 25	$27,345 21

The Balance at Cost Ledger Account will now represent Partly Manufactured Machinery, and the Expense Accounts and the details thereof can be obtained from the Cost Ledger itself. The next step is to balance Expense Account. (Vide remarks below.)

We have now shewn the entries in the books as regards Cost Accounts for six months. The method has already been explained in Chapters II., III., IV., and we trust that read together the principles as therein explained will now be quite clear.

First class and correct work demands efficient clerks, and it takes time when any new or even change of system is introduced before it runs smoothly. The results obtained, however, so fully justify the trouble that it is well worth while to insist on that accuracy in details, which Cost Accounts look for in every direction.

REMARKS ON "COST ACCOUNT" IN THE GENERAL LEDGER.—The Ledger Account is shewn ruled off and balanced as on 30th June, 1902. This balance is carried forward and explains itself. (Vide Fig. No. 29.)

A little study of this account will show that it is merely a collection of the various accounts entering into Costs, and brought together for the sake of convenience. The accounts could be kept separately if convenience required it. If the business were divided into departments, it might be better to keep a separate account for each heading, subdivided into the various departments. In modern book-keeping, however, the principle of keeping these sub-divisions in subsidiary books is adopted with great advantage, instead of increasing the number of balances in the General Ledger.

The columns are numbered in this account simply for convenience in referring to them in these "remarks."

COLUMN No. 1 —FACTORY WAGES.—To this account are charged all Wages productive and unproductive. The total of this column, less the balance at the beginning of the period, shews the actual amount paid for the six months under review. It is here noted that the heading Wages does not cover Salaries incurred as they are one of the Expenses of distribution.

COLUMN No. 5—On the credit side shews how these Wages have to be distributed. The first entry $10,703.65, is transferred and charged to Manufactured Goods Account as previously explained ; $1,500 is carried forward—both these items are productive Wages. The item $1,211.25 consists of unproductive Wages ; so it is transferred to Expenses. (Vide Column No. 4.) This amount is obtained from Cost Ledger, Part 2, where the various Expense Accounts are kept, being posted from the Wages sheets, Should a workman be working partly at productive work and partly at unproductive the facts are duly recorded. This Wages Account should balance if the Cost Accounts have been correctly kept and they can be balanced periodically.

COLUMN No. 2, MATERIAL—This taken in conjunction with No. 6 should now require no further explanation.

COLUMNS NOS. 3 AND 7. DIRECT EXPENSES. — The debit entry, $298.38, is posted from the Cash Book, where it was entered under the heading "Cost Ledger Account"—the credit entry is posted from the Summary Book totals.

COLUMNS 4 AND 8.—"FACTORY EXPENSES" AND "ESTIMATED EXPENSES."—The debit entries constitute all the Factory Expenses for the period and are posted in due course from

the subsidiary books. The credit entry, $2,678.41 comes from the Summary Book and the entry, $375, is the amount of Expense estimated from the summary of incompleted work at date of balance. Now these last items are estimated—and if the estimates had been exact the amount would equal the sum expended on Factory Expenses. By reference to the debit side of the account we see, however, that the actual expenses amounted to $3,114.25, which includes the Estimated Expenses on the unfinished work. This amount $3,114.25, exceeds the estimate by $60.84 which is therefore credited to this account to the debit of Trading Account. In our business we have charged 25% on Wages expended on the jobs—this 25% we have assumed to be a normal charge—as however it has proved a little too low, it shews the work turned out has been less than the normal output. The student is again referred to Chapter 3 in which this subject is discussed as it is one of the most difficult to settle ; that is, to arrive at the true normal rate to be charged.

We have now endeavored to explain how this account is closed into the various General Ledger Accounts, which, being the usual accounts kept, require here no special further explanation,

This business has, we admit, been treated in the most elementary way ; but our whole endeavor in this book is to shew as clearly as possible the principles involved. By elaborating the entries, sub-dividing into shops or departments, and presenting a mass of figures, the student would hardly, we think, have learnt more, but on the contrary would have found it most difficult to trace the entries through, and have probably lost sight of the system.

CHAPTER VIII.

CHAPTER ON FACTORY, COMING UNDER CLASS 2.

Example—CANDY MANUFACTURER.

As we mentioned in an earlier Chapter, the object of Cost Accounts is not only to find out what the goods manufactured cost, but to keep a record of Material used, the Work done and the Expenses incurred. So as a matter of fact even the Manufacturer could not ascertain from these records what any particular job or particular process actually cost he would still be a great gainer. He would find that these records being kept would establish greater care, and better workmanship; and the economy thus put in force would yield far more in lasting profits than neglecting the keeping of proper factory books and saving any present outlay in Cash, or, perchance, the Salary for an extra clerk.

Following our usual practice, we will deal with the component parts separately. Let us first consider then MATERIAL.

Fig. No. 6 gives the form of Material Journal recommended for Factories coming under class 2. In this case we are preparing a set of books for a Candy Factory, and so we must adapt this form to our requirements.

We must first then decide under how many and what headings we intend to divide our Raw Material.

Let the following list represent our decision :

Sugar
Glucose
Molasses
Nuts
Flavoring
Chocolate
Fruit
Sundries

This list can of course be modified to suit the particular business, and further sub-divided if necessary.

FIG. No. 30.

MATERIAL JOURNAL FOR CANDY MANUFACTURER.

Shewing headings into which the Raw Material is divided.

Date	No. of Invoice.	From whom bought	Fol.		Total Invoices	Sugar.		Glucose		Molasses		Nuts		Flavorings		Chocolate		Fruit		Sundries	
						Weight	Amount	Weight	Amount	Weight	Amount	Weight	Amount	Weight or Quantity	Amount	Weight	Amount	Weight	Amount	Weight	Amount

Fig. No. 30 will illustrate our Journal ready for use. We have not in this Chapter entered any figures, as the whole process can we think be more readily followed by studying the various forms presented with the explanations accompanying them.

All Material purchased will be entered in this Journal and charged to a special account opened in the General Ledger, known as "Material Account," to the debit of which the sum of the total Invoices is posted at the end of the month.

The Cost Account book now to be opened is called the Material Ledger, and the summation of its balances will agree with the balance of debit of Material Account.

First, then, have an inventory made out of all the Materials on hand, classifying it under the headings shewn above. This inventory should show the quantity of each kind and the value. Pass a Journal entry debiting "Material Account" with the amount, and then in the Material Ledger debit each amount with its value, the sum of these balances will equal the balance at Material Account, and we shall thus make a correct start, In addition, however, to these money values we have to post the quantities on hand. The Material Ledger will therefore not only shew us that we have so many dollars worth of sugar, or glucose, or nuts, etc., on hand, but will in addition tell us the quantity. Later on when the purchases are posted therein, and also the quantities used, we shall further be able to obtain this fuller information, Note here that it is only intended that monthly totals shall be posted into this Ledger, and the system provides for this, so the work entailed is really not at all formidable. If the Material is bought for cash, provide a "Material" column in Cash Book and open a "Detail Book" for quantities and details after the form of Purchase Journal.

The object of only keeping one account "Material" in the General Ledger is to save work and to facilitate transfers therefrom afterwards to Manufactured Stock Account.

Just a few remarks here re quantities. In some cases it is difficult to fix a convenient unit for such items as flavorings, essences, etc., but this is a matter that common sense must decide, and, if necessary, for these items omit quantities and only record values. It is a fact, however, that a little trouble will establish a weight basis on most apparently unsuitable articles—in the case of essences, it can be ascertained how many bottles go to the pound, etc., but this is a matter we cannot fix here and can only suggest. Suffice it to suppose then that all the invoices for the month have been entered in the Purchase Journal—that the persons from whom bought have been duly credited and the total charged to "Material" in General Ledger, and the monthly totals of details posted to the debits of their proper accounts in the Material Ledger.

Fig. 31 gives form of a Material Ledger Account.

FIG. No. 31.

SUGAR ACCOUNT.

Date	Quantity received	Value	Date	Quantity used	Value

Having shewn how the Material purchased is dealt with we have to consider how we are going to record the quantities of Material used; and we frankly admit that this is not so easy a matter.

In the former case we are dealing with the office book-keeper who is trained to exactness, used to keeping his books in balance. In the latter case we may have prejudices to overcome, workmen who prefer to have no records of their work kept, or of the Material used. Our experience, however, is that good workmen appreciate such records. Does not the fact of objections being made at once point out most strongly that these records are necessary. A cashier who uses cash for his own purpose or is careless in his work objects to the auditor's visits, not so with the man who has everything correct. But directly we leave the office we must drop all columnar book-keeping and ask for what information we want in plain English, leaving a place for the answer, and plenty of room too.

We will assume that our Candy Factory is divided into three departments :

1. Fondant or Cream Dept.
2. Chocolate "
3. General Candy "

Our object now is to ascertain how much Material is used in each department and also the output.

The foreman will receive his orders from the office as to special orders received, and the work done by this part of factory management we are not dealing with.

Daily report slips are prepared, and the following forms, Figs. No. 32, 33 and 34, will give a practical illustration as to

how we keep track of the quantities—before writing up these slips the information required can be detailed on sheets of paper. The important point is that the quantities used must be weighed or measured and not guessed at. To attain successful results constant care and watchfulness on the part of the management is required. These daily reports are sent down to the office, and should be entered on registers shewn in Figs. Nos. 21, 22 and 35 and 36.

It seems hardly necessary to state that the factory will be duly advised daily as to what special orders have to be filled and also as to all work to be done.

FIG. No. 32.

DAILY REPORT SHEET.

FONDANT ROOM.

FONDANT

How many pounds made to-day?.....
How much Sugar used?.....
How much Glucose used?.....
Etc., etc.....

BON BON CREAM

How many pounds made to day?.....
How much Sugar used?.....
Etc., etc.....

DO YOU REQUIRE

Sugar?.....
Glucose?.....
Etc., etc.....

Sign name here.....
Foreman

Date.....

FIG. No. 33.

DAILY REPORT SHEET.

CHOCOLATE ROOM.

How many pounds made to-day?.....
How many Cream Centres used?.....
How many Almonds used?.....
How much Ginger used?.....
How much Fruit used?.....
How much Nuts used?.....
How many 5-lb. Boxes packed?.....

DO YOU REQUIRE

Chocolate?.....
Preserved Ginger?.....
Almonds?.....
Walnuts?.....
Cocoanut?.....

Sign name here.....
Foreman

Date.....

FIG. No. 34.

DAILY REPORT SHEET.

BOILING ROOM.

CREAM CENTRES

How many pounds made to-day?.....
How much Fondant used?.....
How much Flavoring?.....

TAFFEYS

How many pounds made to-day?.....
How much Sugar used?.....
How much Glucose used?.....
How much Nuts used?.....

TABLETS

How many pounds made to-day?.... :....
How much Sugar used?..... .....
How much Glucose used?.....
How many Bottles filled?.....

CARAMELS

How many pounds made to-day?.....
How much Sugar used?..... .....
How much Glucose used?.....
How much Gelatine used?..... .....
How much Flavoring used?.....
How much Chocolate used?.....
How much Nuts used?..... .....
How many Tubs filled?.....
How many boxes filled?.....

WALNUT PUDDING

How many pounds made to-day?.....
How many Fondant used?.....
How much Nuts used?..... .....

BON BONS

How many pounds made to-day?.....
How much Bon Bon Cream used?..... ..
How much Cream Centres used?.....
How much Nuts used?.....

MOLASSES KISSES

How many pounds made to-day?.....
How much Molasses used?.... .. ..
How much Sugar used?..... .....

BUTTER SCOTCH

How many pounds made to-day?.....
How much Sugar used?.....
How much Glucose used?.....
How much Butter used?..... .....

State what materials require to be ordered.... .....

....

Sign name here.....
Foreman

Date.....

FIG. NO. 35.

MATERIALS USED IN MANUFACTURING.

Entered from Daily Reports handed in by Foreman.

(Shewing quantity used.) Raw Material. Manufactured Material

Date.	Department.	Sugar	Glucose	Molasses	Nuts	Flavorings	Chocolate	Fruit	Sundries	Fondant	Cream Centres	Etc.	Etc.
	SUMMARY. Sugar—Quantity @ $ Glucose " " Etc. " " Cost of Material used												

FIG. No. 36.

GOODS MANUFACTURED.

Entered from Daily Reports handed in by Foreman and duly entered in Warehouse Book or other book of record.

Date.	Particulars.	Manufactured Stock or Worked-up Material.				Manufactured Goods			Folio Warehouse Book
		Fondant	Cream Centres	Etc.	Etc.	Quantity	Description	Selling Value	
		Quantity	Quantity	Quantity	Quantity				

At the end of the month then, by adding up the columns, we have the quantities of Material used for that period. It might be noted also that we have so many lbs. of Fondant used—by turning up the Goods Manufactured register we find so many lbs. of Fondant made - thus we can check the quantity of Fondant on hand.

We have now to arrive at the value of the Raw Material used. We average the price paid for the Sugar, Nuts, etc., and prepare a summary as follows, not considering the Fondant at present :

	$	c.
—— lbs. Sugar @ —— per lb.....		
—— " Chocolate @ —— per lb.....		
etc., etc., etc.,		

We then prepare a summary of the Goods Manufactured as follows, taking the selling price :

	$	c.
——lbs. Chocolates, Class 1 @		
—— " " " 2, @		
—— " " " etc., @		
—— " Candies		
(Classifying them)		

This summary will agree, if the records have been properly kept, with the goods received into the factory warehouse from the factory, or in other words, the output. However small or large a factory is, when goods are handed over as finished a receipt should be given from the Warehouse or Shipping Clerk. These receipts provide a means of checking errors, etc.

We now know at the end of the month :

Quantity and Value of Materials bought.
" " " used.
" " " on hand.
" and Selling Value of Goods Manufactured.

The next step to be provided for is the labor, and that is comparatively simple. Fig. No. 19 gives a form which will meet with our requirements, and it will be noted that all we provide for is a record of the Wages for the month, and we do not attempt to locate them to each order filled, as is necessary in factories under Class 1.

The next point is the expense of production, and that is simple, as it is only ascertaining what the expenses are in each department for the month. A simple estimate can be made so as to include items which are not paid each month.

We now can collect together all the component parts making up the cost of the output for the month.

These particulars are duly entered up in the Summary Register. See Fig. No. 28.

This statement is not exactly correct, but made up monthly will be approximately correctly. Where is the discrepancy then? It is this : We charge up actual outlay for Wages and Expense for the month, but part of these should be strictly charged to the goods partly manufactured and outstanding at the end of the month. But this will average itself up month by month, and in our opinion need not be considered.

From this monthly summary a fair estimate can be formed of the gross profits made, or by adding up the costs of distribution of the net profits.

The journal entry to be passed through the books is as follows :

Manufactured Goods Dr. $

To Wages.....$
To Factory Expenses.....
To Material Cost Account.....

As follows :

	$	c.
Sugar....		
Chocolate.....		
Nuts.....,.....		
Etc., etc., etc.		

The details of the Materials used will then be posted to the credit of their proper accounts in the Material Ledger, so as to keep this in balance with the General Ledger Account.

If the results obtained are not satisfactory, too much Material used for work done, or it is found that Materials on hand do not agree with the quantities as per the Material Ledger, it will be necessary next month to try and fix up the department where the waste or carelessness is. This can be done with a little thought and care. Further, each month, if desired, the cost of any one line can be ascertained by using the method explained in dealing with factories under Class 1.

At the end of the year, when stock taking, the value of the partly Manufactured Goods will be included in the inventories of stock on hand.

If it is desired to make the Monthly Statement more exact it is a simple matter to ascertain the value of the Manufactured Goods used (vide Fig. No 35.) By taking stock periodically of

Raw Material when it is reduced in quantity a thorough check on quantities used can be maintained. By ascertaining then the cost of production and the cost of maintenance, and deducting total thus obtained from the value of the Manufactured Goods turned out for the same period, a fair estimate of profit or loss should be obtained. There is an important point to be remembered, and it is this : if a slack month is being considered well and good, but if the output for the month is above normal it may be misleading, that is, the profits will be above the average.

The estimate of profits is only intended for the guidance of the proprietor, and Manufactured Goods Account will duly be charged up with their cost as shewn, and sales will be duly credited, and profits arrived at at the end of the financial year in the usual way.

CHAPTER IX.

LUMBER MANUFACTURERS' ACCOUNTS.

For the further purpose of illustrating the adaptability of the systems outlined to industries of the nature of those enumerated in Class 2, the Authors here give the Accounts of a Lumber Manufacturer.

In the example given, the Manufacturer is presumed to be the owner of the Timber Limits under license from the Ontario Government, also Timber on land purchased in Fee, and the owner of certain of the permanent improvements on the streams made for the purpose of driving or floating logs to the mill.

The mill is built for the manufacture of Lumber, Shingles and Lath. For easy reference, and that the illustration may be readily followed, the quantities are given in even numbers and the accounts in skeleton.

We will then start with the Balance Sheet of John Bargin & Co. as for Dec. 31st, 1899, as shewn in Fig. No. 37.

As this work is not intended to be a treatise on the accounts of any special Manufacturer, we will assume that all the entries of the Commercial Accounts have been made, and deal only with those necessary to illustrate the process of arriving at the cost of the product.

We will assume then that John Bargin has decided that, for the wants of his business, it will be necessary for him to take out, 10,000,000 feet of logs. After deciding as to the locality the timber is to be taken from, the information he would want is:

First—The cost of the logs on the skidways,
Second—Their cost in the water,
Third—Their total cost, delivered in the millpond ready for sawing.

William Wood who devotes his attention exclusively to the getting the logs from the forest to the mill, then arranges for this supply of logs as follows:

Camp No. 1, 1900--Foreman, clerk and 70 men get out	2,500,000 feet
Camp No. 2, 1900—Foreman, clerk and 80 men get out	3,000,000 "
Contractors (or Jobbers as they are generally called in trade), varying in quantity according to locality, get out	3,500,000 "
	10,000,000 "

FIG. No. 37.

JOHN BARGAIN & CO. December 30th, 1899.

LIABILITIES.			ASSETS.			
Bills Payable			TIMBER LIMITS—Township of Hymen, as per valuation, Memo. of particulars in Confidential Memo. Book			
Accounts Payable as per schedule			MILL PROPERTY — Including Sawmill and all buildings and machinery necessary for carrying on the business			
Unpaid Wages			PLANT—Which includes outfits for Camp and Drive, Horses, Waggons, Sleighs, Boom-chains, etc.			
John Bargain's Capital Acc			LOGS ON HAND—97,000 pieces sawlogs 12 to 16 ft. including small lot of Boom Timber. Scale 9,750,000 ft. @			
William Woods			LUMBER—In piles as per Inventory			
Profit and Loss			4,000,000 ft. average general			
Balance			1,000,000 " " culls			
			SHINGLES—500 XXX @			
			LATH—10,000 No. 1 @			
			Accounts Receivable			
			Bills Receivable			
			Cash { In Bank			
			Cash { In Office			

The accounts, as shewn in Figs. Nos. 45 and 46, will give one the exact cost of the log product delivered at the mill-pond ready for sawing. One thing the Student must always bear in mind—that all businesses of this kind, which change the form of a natural product into a manufactured shape, are more or less speculative in their character, consequently the accounts have to provide for this condition.

What is meant in this particular instance, is, that these saw-logs are scaled or measured in the bush Such measurement can only tell what, in the opinion of the Scaler, the logs will produce in merchantable lumber, and while it is true that a good and experienced Scaler can come fairly close to it, still he cannot see the inside of the log, and until the saw in the mill discloses the defects. he can only in a general way allow for them.

In the first instance the cost of the log product per 1000 feet is determined by the bush Scaler or measurement, which measurement has to be adjusted by the actual cost in the mill.

As we have seen, the accounts as shewn in Figs. Nos. 45 and 46, indicate the cost of the logs in the pond, ready to be sawn into lumber. There are certain accounts required to be kept in the camp, and these acconnts are kept in a book known as the Camp Ledger and entered straight to the accounts from Vouchers or a Day-book. Fig. No. 38 shews the account kept with the particular camp in the office, and Figs. Nos. 39, 40, 41, 42, 43, 44, 45 and 46 shews the various accounts kept, a perusal of which will explain them. It will be observed that, with the exception of the "Van Account," they are all closed into the Operating Account. Figs. Nos. 45 and 46.

The Van Account is simply a record of goods sold to the men. The Operating Account is divided into two parts, the first part shewing the cost of skidding and the second part the cost of hauling as well.

FIG. NO. 38.

ACCOUNT IN GENERAL LEDGER. CLASS. 2.

Camp No. 1, 1900. Foreman.

1900					
Dec. 1	To Provision Acc. as per Inventory		April 30	By Cost of 25,000 pieces of sawlogs scaling 2,500,000 ft. delivered in waters of Long Creek ready for driving @ average of..... Charged to Long Trading Acc. 1900	
	" Cadging.....				
	" Wages.....				
	" Teams.....				
	" Blacksmith shop.				
	" Repairs.....				

FIG. NO. 39.

PROVISION ACCOUNT.

1900					
	To Flour.....		April 30	By Cost of boarding men from Dec. 1 to April 30th.....	
	" Pork.....			By Wages paid for 9680 days for one man @ average of being balance charged to Operating Account.....	
	" Sugar.....				
	" Tea.....			By Inventory provisions on hand carried forward	
	" Dried Apples ...				
	" Beef.....				
	Currants.....				
	" Raisins.....				
	" Rice.....				

Accounts kept in "Camp" in book called "Camp Ledger" subdivided into accounts, as Provision Account, etc.

In figuring up the cost of boarding the men in camp, the cost should be determined on the working days. What is meant is this. A man may be in camp, for say thirty days, four of these days are Sundays and one day he is sick, his time is placed on the pay-sheet 25 days, and the cost of board is on 25 days, not on 30 days.

If this method is carefully enquired into, the information given will always be in the nature of giving an indication of this cost being high or low, for two reasons :—

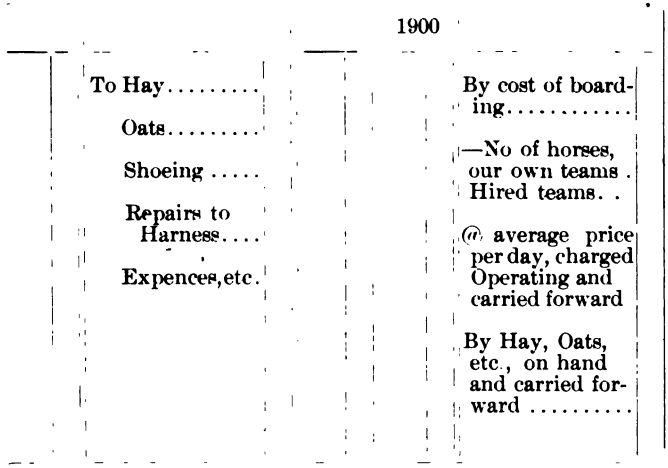
First—Waste in cooking.

Second—Men hanging round the camp and not working. Some firms do not figure in the wages of cook and helper, others do.

The reason given for not figuring these wages is, that the cost of comparison would to some extent be influenced if changes occur, and different rates of wages paid in other camps engaged in the same operations.

FIG. No. 40.

STABLE ACCOUNT.


1900
To Hay.....
Oats.....
Shoeing .....
Repairs to Harness....
Expences, etc.
By cost of boarding.....
—No of horses, our own teams . Hired teams. .
@ average price per day, charged Operating and carried forward
By Hay, Oats, etc., on hand and carried forward .....

The same rule as to estimating the cost on actual time worked, applies to this account as to the Provision Account.

FIG. No. 41.

GENERAL EXPENSE ACCOUNT.

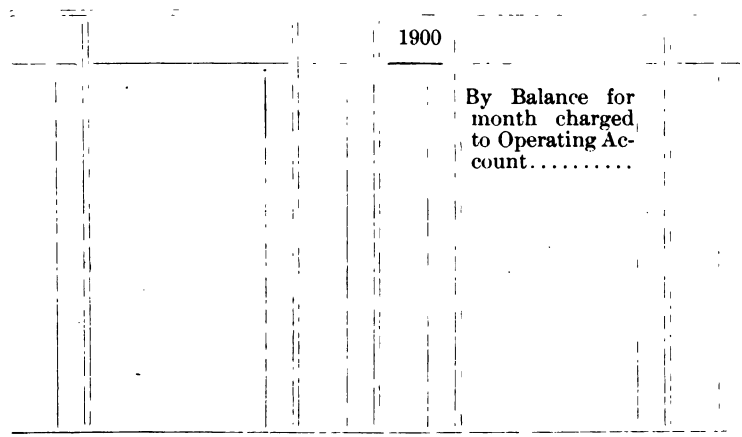


FIG. No. 42.

VAN ACCOUNT.

1900					
	To Socks.....			By Sales charged on Time Sheet.	
	Undershirts ...				
	Topshirts				
	Boots				
	Sheepacks				
	MEMO.— This account is kept at the camp and also kept at the office in General Ledger.				

FIG. No. 43.

WAGES.

1900					
	To Wages			By Wages of men as per Time Sheet, charged Operating Account	
	MEMO.— Above items include wages for men and teams, same being charged separately.				

FIG. No. 44.

HEAD OFFICE—ACCOUNT IN CAMP LEDGER.

1900		1900	
			By Provisions..
			Hay.....
			Oats .....
			Goods for Van
			Repairs to
			Harness.....
			Sundries.....

FIG. No. 45.

OPERATING ACCOUNT.

1900			1900		
J'ly to Dec	To Provision % Men at average			By Balance, carried forward, bring cost of skidding.....	
	To Stable—			—No. of pieces of logs—feet at average cost of	
	Board of Horses. at average			—per foot	
	Board of Hired Team at average			MEMO. — No. of feet scaled——	
	To Wages for			—No. of feet estimated..——	
	To Expense %.. month Men...				
	To Wages of Hired Teams..				
	To Balance..				

FIG. No. 46.

OPERATING ACCOUNT.—Continued.

1900			1900		
Jan.	To Balance brought forward			By Cost of skidding.....	
	Provision %.			By Cost of hauling—pieces—at average amount of——feet per piece——feet average price—	
	Stable %				
	Expense %..				
	Wages %, men			MEMO—Total Cost of skidding and hauling to water to date. Delivered in water, logs cost ——per m feet. Total carried forward.	
	Wages %, teams.....				
Feb to Apr	To Balance			By Cost of skidding.....	
	Provision %.			By Cost of hauling —pieces—feet at average price of——	
	Stable %				
	Expense %..				
	Wages %, men.....			Total Cost hauled to water——.	
	Wages %, teams.....				

FIG. No. 47.

FORM OF TIME SHEET USED AT CAMP.

..... Camp.

Time Sheet for month of ..... 1900.

Names	Occupation	Days	Rate	Amount	Other Credits	Goods		Bal.
						Camp	Van	
1	2	3	4	5	6	7	8	9

MEMO.

Columns 1, 2, 3, 4, 5 explain themselves.

Column 6 is for credits other than time, as, for instance, a Settler may come there with his team and bring with him a certain quantity of fresh beef, which would be purchased from him.

Column 7 is for deductions from men's time for goods from camp sold them.

Column 8 is for deductions for goods sold from the Van. (See Fig. No. 42.)

Column 9 is the net cash balance due the workman.

We have now to consider what books must be provided to get at the cost of sawing the logs into lumber. First the logs will probably be sorted according to size and quality, and also those that it is considered could be more profitable to manufacture into shingles than lumber will be picked out, put in a boom by themselves and sent to the shingle mill.

Lath is manufactured from lumber refuse, such as edgings and slabs. We will now presume that the Manager has decided as to the kinds of lumber and the size he will have the logs sawn into. In this book we are not dealing with matters of policy, but simply with facts that will tell him results.

To let us know such results in an intelligent manner, the following books would as well as any give the information necessary.

1st. Time Book or Wages Book.	See Fig. No.	48.
2nd. Mill Book.	" " "	49.
3rd. Sales Book.	" " "	50

and the following accounts in General Ledger :—

MILL MANUFACTURING ACCOUNT.—To this account will be charged all the expenditures necessary to keep the mill in first-class repair, including the cost of keeping the refuse burner and boilers that supply steam for the steam feeds and other machinery. Wages of the men engaged on the sawing floor and supplies of any kind necessary to the manufacture of the product.

SHIPPING ACCOUNT.—To this is charged the expense of the inspection of lumber at time of selling and shipping, and all wages of men engaged in loading the transportation vehicles whether in the shape of boats or railroad cars.

LUMBER SALES ACCOUNT.—Into this is credited all sales which have been made during the year, such book providing for the keeping of an accurate count of the quantities, as it is from the count in this book that all figurings of cost are based.

FIG. No. 48.

WAGES BOOK.

No.	Name	Position	1st to 31st	Total Days	Rate	Amount	Address	Bal. Due	Fol.
	Jno. Brown		L 1 L 1 S 1 M 1 ℔ 1 ¶ 1 ‡ 1 † 1						
	James Jackson		S 1 " 0 " 1 " 1 " 0 " 1 " 0 " 1						
	G. H. Williams		L 1 " 1 " 1 " 0 " 1 " 1 " 0 " 1						
	N. B. Explanation of Symbols: L—Logs S—Shingles M—Mill ℔—Lath ¶—Stable †—Blacksmilh Shop								

We will presume we have now arrived at the final stage of the operations, and all the logs are manufactured into Lumber, Lath or Shingles, except such as it is desired to carry over to the next season, and it is desired to know the following facts for future use :

1st. The AVERAGE PER 1,000 FEET cost of the logs delivered in the millpond ready for sawing.

2nd. THE COST OF SAWING said logs, and the product realized from the operation, keeping separate the good lumber from the cull lumber.

3rd. THE COST OF SHIPPING and distributing it to the consumer.

4th. THE TOTAL COST.

From the information that has been recorded in the camps and from records kept at the mill, at the end of the financial year we draw up the following accounts :

1. Log Trading Account.
2. Lumber Trading Account.
3. Shingle Trading Account.
4. Lath Trading Account.

Fig. No. 52 gives form of LOG TRADING ACCOUNT. The first entry on debit side is inventory of logs on hand at the beginning of the period. Then follows the costs from the various camps, being the balance of their Operating Accounts closed with this account.

The credit side shews inventory on hand carried over to next season, and the quantity of logs transferred to Shingle Account and Lumber Account.

From this account we can then obtain the average cost of the logs delivered in the millpond ready for sawing.

Fig. No. 53 shews LUMBER TRADING ACCOUNT. The logs credited to the Log Trading Account are charged here in the first entry. Then the various costs are shewn. This account is credited with all the sales made and the balance is transferred to the Profit and Loss Account. With reference to the Shingle and Lath Accounts, shewn in Figs. Nos. 54 and 55, note that only the cost of manufacturing them is charged. They are practically by-products made from what would be otherwise waste.

In dealing with by-products generally, it is usually best to merely record the cost of manufacturing without attempting to value the cost of the Raw Material, The gross profit made can go direct to the Profit and Loss Account or the main Trading Account. In some industries there is more profit made out of by-products than on the main product manufactured.

APPORTIONMENT OF GENERAL EXPENSES.—We have not attempted to apportion this account, except the mill manager's salary, etc., as shewn in Lumber Account, as in the actual practice the gross profits are credited to the Profit and Loss Account, and the general expense is charged to this account. Should it, however be desired to apportion to the Trading Accounts separately, it could be done on the basis of so much per thousand feet of lumber, taking the general average output as a basis.

FIG. No. 49.

REPORT OF LUMBER SAWN AND LATH SHINGLES.

Manufactured by John Bargin & Coy's Mill, 1901.

Description.	Stocks	Sidings	Stripes		Cull	Total

Where logs from.....
Scaled by.....

Logs
Circular cut..... "
Band saw cut..... "
Gang saw cut..... "

Total feet good Lumber %
" " cull " %
Total

Total mill cut log from pond.
Lath cut

FIG. No. 50.

SPECIMEN OF LUMBER SALES BOOK.

Feet Lumber	Pieces Lath	Pieces Shingle	Name of Party charged, date, etc.	Price	Value	Value	Value
			Total for Month				

FIG. No. 51

SHINGLE MILL.

No. of logs cut. Shingles made.

X Pieces	XX Pieces	XXX Pieces

Signed Mill Counter.

FIG. No. 52.

LOG TRADING ACCOUNT.

1899			1900		
Dec. 31	To logs on hand as per inventory, 9,750,000 @		Dec. 31	By inventory logs on hand carried overto next season, 3,000,000 ft. being 24,000 pieces @	
1900 Dec. 31	To Camp No. 1, 2,500,000 @			By Shingle Account 1,000,000 ft. @	
	To Camp No. 2, 3,000,000 @			By Lumber Account 16,250,000 ft. good lumber @	
	To take out by Jobbers 5,000,000 ft. @				
	To Crown Dues on 10,000.000 ft. @				
	MEMO—½ million ft. free of Dues.				
	Total 20,250,000 ft.				

FIG. No. 53.

LUMBER TRADING ACCOUNT.

1900			1901		
Dec 31 1901	To Log Trading %, 16,250,000 ft. @		Dec 31	By Lumber Sales Book credited monthly—	
Dec 31	To Mill Manufacturing %, being cost of manufacturing above logs into Lumber, product being 16,000,000 ft. of good Lumber and 4,250,000 ft. of Culls at average price of $			Total for year as follows: 16,000,000 ft. good Mill Run @ say $ average	
	To Shipping %, being shipping, inspecting and hauling 20,250,000 ft. @			4,250,000 ft. Cull Lumber @ say $	
	To General Expense Charges, being proportion of Manager's salary, office expenses and incidentals say @ (Charged Monthly)			MEMO.— Carry forward of above 6,000,000 ft. good Lumber and 250,000 ft. of Culls @ same price 7.	
	To Balance Profit and Loss %			By Profit on Shingle %	
				By Profit on Lath %	

FIG. No. 54.

TRADING SHINGLE ACCOUNT.

1900				1900			
Dec 31	To inventory: Shingles on hand, pieces XXX	....	..	Dec 31	By sales from Sales Book: ....pieces XXX @ per thousand pieces	....	..
1901 Dec 31	To Log Trading %, 1,000,000 ft. @	....	..		.....pieces XX @ per thousand pieces	....	..
	To cost manufacturing above logs into 16 in. Shingles: ....pieces XXX .... " XX .... " X	....	..		.....pieces X @ per do, do	....	..
	To gross profit transferred to Lumber %	....	..		Inventory: Shingles on hand ....pieces XXX .... " XX .... " X	....	..
		....	..			....	..

FIG. No. 55.

LATH TRADING ACCOUNT.

1900				1901			
Dec 30	To inventory: ..pieces No. 1, $ .. " No. 2, $	....	..	Dec 31	By sales: ....pieces No. 1	....	..
1901 Dec 31	To cost of manufacturing	....	..		.... " No. 2	....	..
	Gross profits	....	..		Inventory: No. 1 No. 2	....	..
		....	..			....	..

CHAPTER X.

SKETCH COST ACCOUNTS FOR FACTORIES. CLASS 2.

In this chapter we shall endeavor to summarise some of the principal points to be observed and principles to be followed in dealing with Cost Accounts as applied to Factories, Class No. 2 ; that is to say factories, generally speaking, where all kinds of goods are manufactured and where it would not be practical to follow through the cost of each article manufactured.

Let us first then take the Inventories of the Merchandise, Raw Material or Stores, and of Partly Manufactured goods.—

From these Inventories we will prepare a careful summary of the quantities of each and every line.

In preparing these summaries, it will have to be decided what units are to be fixed on, in writing up these quantities—whether weight or number.

When this is completed, have a number of sheets ruled as per Fig. No. 69, or adapted to suit the particular business ; and set aside one sheet for each line, the first entry being the

amount as per Inventory, entered on "In" column and carried to the Balance—It is very clear then that when these are all entered on the sheets, by taking off a Trial Balance, so to speak, of the Balances, you obtain the amount of merchandise on hand at date of taking Inventory.

The object of starting these sheets is to afford the means of keeping a check on Stores and Material during the periods between stock taking and also to shew quantities on hand. These sheets are then arranged on a file alphabetically or classified so that they can be readily referred to.

In the chapter on Material vide Fig. No. 6 forms of Journal were given for Stores, etc. From the Journal then each month, the quantities of Merchandise bought is posted to the "In" column. It seems hardly necessary to again mention that Merchandise coming in is to be Debited to the stock Sheets to the "In" column and that Merchandise going out is credited or posted to the "Out" column; further it is to be remembered that no values are kept on these Stock Sheets, but if at any time an estimate is required of Merchandise it has to be valued from the summary of quotations taken from sheets.

Where the Factory provides a Store Keeper whose duty it is to keep record and take charge of all stores coming in and going out, the record on the sheets will shew at all times the quantities of stores under his charge, He will be responsible for all the goods coming in, that is, all the goods purchased; when he issues stores to the departments, or they are sent direct to any department he will receive credit in his Day Book, as from his records the quantities will be credited to the "Out" column on Stock Sheets. Therefore the

Balance on Stock Sheets should shew correctly the stores in charge of the Store Keeper at any time.

Now to obtain the quantity on hand in the factory it will be necessary for the foreman of each department to estimate each month the quantities on hand.

(a) of Raw Material and Stores.

(b) of Partly Manufactured Merchandise.

In many businesses, where it would not be practicable to take stock monthly, a good estimate can be arrived at by weighing all Merchandise and fixing value on say the pounds unit. This system for rough stock taking is in practice in many factories in the United States and is very useful for estimating stores month by month.

We have considered now the method of keeping records of Stores where a Storekeeper is kept, we have now to consider the case of smaller factories where one is not kept.

In all factories the daily output should be carefully recorded in each department, and by the daily output, we mean, not the Sales, but the quantity of Manufactured Merchandise which is completed, or completed as far as the particular department is concerned.

The records of this output should be kept on sheets specially ruled for the purpose and the following form Fig. No. 74 will fully explain the method of doing this. These sheets must be written up und summarised daily and then filed away for reference as required.

From the Material Journal the goods and stores coming in are charged to the Stock Sheets and from the summary of Output Sheets these Stock Sheets are credited. The balances shewing stores on hand, which will cover Partly Manufactured goods. Of course, without actual stock taking all

SUMMARY OF OUTPUT FOR _____ 1904.

Description	Estimated Cost	No. or Qu'ntity	Value	Quantity of Material used. (Estimated.)						
				Kind of Material	Kind	Kind	Kind	Kind	Kind	Kind

quantities on hand are more or less estimated, but it becomes a simple matter to take stock, say each month of one or more lines and if there is any difference between amount on hand and the balance on Stock Sheet it will require looking into.— It will be found as a rule that a certain percentage will have to be allowed on Balance on Stock Sheets for waste or loss.

After all, one great use of Cost Records is to verify the estimates made of Cost, and if this system is adopted we can do so. Suppose at the end of the month we find quantities on one line quite wrong—It means that our estimates are wrong somewhere, or there is waste or possibly theft is going on— Perhaps a careful survey of the figures may detect the error. If not then take one line and keep careful record of it, under system given for Factories Class No. 1, and verify your estimated cost. In every Factory this should be done from time to time.

We have now dealt with the question of Stores and Raw Material as fully as it can be dealt with in a general way, and we come to the question of arriving at the approximate profit or loss made for the month. The items forming the Expenditure are Material, Wages, Factory Expenses and Selling and Management Expenses.—

The Material we have treated on in the previous pages.

The Wages can be obtained from the Wages Book.

The Factory expenses are recorded in the Commercial Books, but care must be taken that these represent the Expenses for the period in which we wish to estimate our profits or loss—There are certain payments which can be distributed over the year—As far as possible all expenses should be

arranged on a Monthly Basis, and by means of a Memo. Book this can easily be adjusted.

Referring to this Monthly Account we have in this chapter provided for all the Items except Inventory of Manufactured Goods on hand—this very important item should also be verified by means of special set of Stock Sheets one sheet for each line manufactured. From the Output charge the Stock Sheets, which are first started from the Inventory shewing quantity on hand of each and every line manufactured. Now have prepared daily a Summary of all Sales, and from this Summary let the Stock Sheets be credited with quantity sold —the total of Balances will give Manufactured Goods on hand and can be verified periodically by comparing with actual Stock on hand of any one line.

It seems hardly necessary to point out the value of these Stock Sheets if properly kept. The Manufacturer sees the turnover of all lines manufactured and quantities on hand— Without them, he knows, without being told, what is often the procedure when an order comes in—How that special "rush instructions" are sent to the Factory to manufacture a certain line, when there was enough in stock to fill the order.

As regards the amount of work involved we believe the extra amount of salary paid for this work, will give a return which will amply compensate and pay its cost several times over.

Selling and Management Expenses— The same remarks apply.

This apparent difficulty could be met by opening an account in a Memo. Book and charging this account with all

the known Expenses for the year – one-twelfth of this amount would have to be provided for each month in addition to extra disbursements—Items thus entered might be Insurance, Taxes, Directors' Fees, Rent, &c., &c.

We then prepare accounts as follows :

MONTHLY ACCOUNT.

Dr.		Cr.	
To Inventory at beginnig of month—Actual or Estimated.....		By Sales less Discounts and Allowances.....	
" Purchases including Freight and Duty, less Returns and Allowances-		" Inventories Stores Raw Material Partly Manufactured Material Manufactured Goods on hand.	
" Wages.....			
" Factory Expenses, partly estimated.....			
" Selling and Management Expenses partly estim'd			
" Profit for month...			
	$		$

CHAPTER XI.

DEPRECIATION AND RESERVES.

That every Manufacturer should set a certain sum aside out of his profits every year to provide for depreciation or deterioration of Buildings, Machinery and Plant, is universally admitted. But whether this should apply in the same way to all assets which are subject to depreciation is an open question, as, for instance: We may refer to Timber Limits, Iron and Coal Mines, etc., Steam and Sailing Ships (particularly so when the latter are held on the single ship company principle) Patents, Concessions, and also Franchises which are limited to a term of years. Recent decisions, particularly in the English Courts, lead us to the conclusion that the equitable way for such assets is to make no provision for depreciation as far as the Balance Sheet of the Company is concerned, but to pay to the Shareholders or partners all profits in dividends, and let them out of such profits provide their own as they see fit. Generally speaking when the Limit, Mine, Patent or Franchise is exhausted the undertaking comes to an end, and the Shareholder contends that he can take care of the provision for depreciation thus paid him in dividends more profitably than the Manager or Directors can do for him.

Assets, however, that are of a fixed nature, and capable of repair and renewal, come under another head such as these enumerated, namely: Buildings, Machinery, Plant, Furniture and such like. How shall these be treated? Depreciation or loss of value may come from two causes:

"A." Ordinary wear and tear from continual use.

"B." Loss of value by being superseded by Machinery capable of turning out more in a shorter time and more economically as regards saving of material and labour; and again more economical processes in such undertakings as Dye Works, Wall Paper Manufactories, Tanneries, etc., the adoption of which would necessitate the complete re-arrangement of the Buildings, etc.

Without doubt depreciation will very much depend on the care taken of these assets, and one of the first principles in Accountancy is that all amounts expended on repairs and replacements must be charged to Expense and not posted to the Capital Accounts affected.

It follows then that the more thoroughly the repairs and replacements are done so much less is required to be set aside for depreciation.

Theoretically, depreciation is supposed to build up a fund to replace the asset when it is worn out.

Let us then briefly consider depreciation as it affects the principal assets above stated.

BUILDINGS.

Following out the ideas as above, with repairs thoroughly executed, and all the costs of so doing charged to repairs (an Expense Account) every year, it seems reasonable to suppose that the value of the building will remain for practical purposes, unchanged for a considerable period.

The nature of the Building must also be considered.

It is also quite possible that up to a certain point the Building may increase in value, owing to increased costs in material and labor, and value of position, etc., but this question need not here be raised, except as an argument against unduly

writing down, as no wise man of business would write up such assets and attempt to shew a profit this way. We speak thus advisedly, because while writing up assets may apparently make profits look good, yet the absolute result is that no business can live that does not earn its profits from its own legitimate line of trading or manufacturing.

We are aware that there are regular rates for depreciation which the theoretical rules set down as compulsory to be set aside or written off the capital value, as shewn in the books of Buildings, etc.

This, however, is a matter to be settled by the Proprietor himself, and must largely depend upon existing conditions as we have attempted to shortly outline.

It is, however, a very different proposition if it is a question of depreciation on Leasehold Property. The proposition is simply then as follows :

The Value as shewn in the Books - -	$
Less the Estimated Value realizable at termination of Lease - - - - -	$
Amount to be provided for - - -	$

According to the terms of the Lease so can an amount be set aside yearly to provide for this depreciation. It can either be charged as a rental and credited to a Reserve Account, or be specially invested. If the latter it will be a matter of calculation to find out the proper amount yearly with interest, which will be required to form fund to replace premises at end of period.

MACHINERY.

So much here depends on the character of the business. Take one machine and consider its life ; it is fixed at twenty years ; well then we should write off 5 per cent ; but suppose

only five years hence, by reason of new inventions this machine is obsolete. The depreciation is incomplete, as the machine could only be valued as old iron.

On the other hand there is a certain class of machine with engines and boilers that can be relied on to perform all the work required for a certain indefinite period. We have used the term "the Life of a Machine," but this "Life" can, in many cases, be prolonged by repairs and replacements. It must not be supposed that we are opposed to providing reserves for depreciation, on the contrary, but what we wish to point out is the difficulty in fixing an arbitrary rate. Probably the wisest course is to have all machinery revalued every five years, and readjust the reserves or the amount written off accordingly. But never allow repairs and replacements to be charged Machinery Account. In fact, only new Machines should be charged, and all old machines directly they are out of use should be credited to Machinery Account at their book value.

PLANT ACCOUNT.

This Account will cover all articles used other than Merchandise, Machinery and Supplies, and there can be no question that an ample depreciation must here be provided.

As in the case of Machinery (where replacements such as belting are charged as an expense) so with Plant, if all replacements are strictly charged to Expense, it will reduce the amount for depreciation.

Records of all Plant are best kept on Stock Sheets, and tally kept constantly of same. Especially is this important with contractors, where so much Capital is represented, and where the works are periodically shifted.

Before concluding we cannot impress too strongly upon our readers, particularly such as are Students, that this question, of the proper amount to be provided for depreciation, is one that cannot be fixed by any hard and fast arbitrary rule, but must be decided by the Management as to what is best in their own interest.

In some cases it may, indeed, be permissible to appreciate or write up certain assets, as in the case of a Timber Limit that, at the time of purchase, may have been situated with little or no transportation facilities, but, as the Country develops, new water ways and Railroads may go through it and enhance its value, in some cases ten-fold. Under such circumstances it would seem but fair that present Shareholders should be able to shew by their Balance Sheet that their investment in the shape of Shares or Stock was of greater value.

This increase in value should be credited to a Reserve Account instead of being paid in Dividends. Although, probably, if all the Shareholders consented, and funds were available, a cash dividend in some cases might be paid.

RESERVE ACCOUNTS.

It is a fact somewhat worthy of notice, and one which the professional accountant has the opportunity of observing, and it is this: The different treatment of profits by the sole proprietor or partnership, and the Shareholders of a Joint Stock Company.

In the former case with the prosperous business we observe the profits year after year closed into the Capital Account and the proprietor only withdrawing sufficient for his personal requirements, whereas, too often, the one idea of Shareholders seems to be to get as much in dividends as possible, and they

seem also to ovsrlook the fact that the growing business must be maintained with fresh capital, either from outside sources or from profits.

In Joint Stock Companies then, as a general rule, it would appear that the necessity for watching the provisions for depreciation is the more urgent. Should the Management set aside too much it will have a beneficial effect, as it will provide further capital for future development.

We hear a good deal of the rights of Shareholders to withdraw to the full all the profits earned, that is the balance to the credit of Profit and Loss Account.

If this balance is on hand in the shape of Cash in the Bank it may be right and proper to so use it, if all depreciations are provided for, but if it is locked up in Merchandise, or worse still, in assets, valuable, but not realizable, it is obvious that the payment of such dividends must be a serious evil or menace to the business. This may be an extreme view of the case; the profits might be locked up only temporarily in good accounts or Bills Receivable, but even then care would be required.

The Proprietor of a business would think twice before borrowing from his Banker to get at his profits, and, yet, the Shareholders of the type referred to would consider this quite in order.

Another point about Reserves which often occasions controversy is this: How shall they be treated? Should they be specially invested or left in the business? As a general rule in Manufactories they should be left in the business, and we are here not discussing Reserves for Banks and Companies of a kindred nature.

A very valuable way of building up a Reserve Account for any special purpose is by a Life Insurance Policy, by insuring the lives of one or two of the Principals, for the benefit of the business or to enable a division of a partnership to be made in the event of the death of a partner. Also in a Joint Stock Company, where the success of the business largely depends on the technical skill or ability of one or two men, this principle of Insurance appears to be one worthy of careful consideration.

CHAPTER XII.

IN CONCLUSION.

There are one or two special points in connection with the question of the normal output of the factory, which was considered in a general way when we were discussing the method at arriving at the proper percentage at which to charge factory expenses on the labor expended on any given job, that we now desire to explain. Every Manufacturer should establish or ascertain what is the normal output of his factory, and the following illustration will afford one of the advantages of having this recorded. It stands to reason that if the sales for any given year are doubled, that the percentage of expense must decrease, and we will suppose that the average output for a number of years is $150,000. Towards the end of the current ten months it is ascertained that the business done, with the business in sight for the next two months, amounts to $125.000. Now all the calculations as to rate to charge factory expenses were presumably based on $150,000 worth of business being done, therefore if less is done the profits will suffer, and it will be more advantageous to do $25,000 extra business at little or no profit, and maintain normal percentages of costs, than to be content with the smaller output which covered higher profits.

Some Manufacturers think that the rate to charge factory expenses on the work being done should fluctuate as the

particular year is prosperous or not. Now we strongly contend that the rate should be fixed on the basis of a normal output, determined, if the factory has been running for some years, by the average of, say a period of five or ten years; if an entirely new factory, on its fair manufacturing capacity.

By this method, should there be a larger increase in the sales, greater profit will result, on the contrary, diminishing sales, less profit. It is on the principle here involved that the factory conducted on a large scale can always make larger profits than the small competitor, and further, the Profit and Loss Account should clearly state the amount of profit or loss, as the case may be, resulting from the fluctuation in output above referred to.

PERCENTAGE ON SALES.—This has been before referred to, and it may be useful to here give an illustration of a set worked out, with a practical method of saving work and time in so doing.

TRADING ACCOUNT

1900				1901	
Dec. 31	To Inventories	41,641 11		Dec. 31 By Sales	196,513 01
1901					
Dec. 31	To Purchases	140,972 65			
		182,614 76			
	Less Inventories stock at present date	48,678 02			
			133,936 74		
	To Wages.....		26,151 69		
	" Factory Expenses..		6,862 72		
	" Gross Profit		29,561 86		
			$196,531 01		$196,513 01

PROFIT AND LOSS ACCOUNT.

1901				1901		
Dec. 31	To Insurance....	$752 99		Dec. 31	By Gross Profit....	29,561 86
	" Express Chgs.	165 32				
	" Salaries.....	4,669 92				
	" Telephone, etc.....	126 17				
	" Travelling Ex.	193 00				
	" Advertising .	394 27				
	" Stationery....	78 76				
	" Cars.....	81 05				
	" Postages	132 69				
	" Sundries	41 44				
	" Legal Exs....	45 00				
	" Auditor's Fee	200 00				
	" Commission on Sales...	3,466 96				
			10,347 57			
	" Interest and Exchange		4,437 92			
	" Donations.....		172 28			
	" Taxes.....		160 25			
	" B & D Debts Account.		3,430 46			
	" Profit for year.....		11,013 38			
			$29,561 86			$29,561 86

In making comparative percentage statements, it is usual to base the percentage on the amount of net sales.

To obtain this percentage, multiply each item by 100 and divide by 196,513.01 the amount of the sales.

In order to save labor, prepare a short statement of the several multiples of this devisor, as follows :

196,513 01	= 1	times
196,513 01		
393,026 02	= 2	"
196,513 01		
589,539 03	= 3	"
196,513 01		
786,052 04	= 4	"
196,513 01		
982,565 05	= 5	"
196,513 01		
1,179,078 06	= 6	"
196,513 01		
1,375,591 07	= 7	"
196,513 01		
1,572,104 08	= 8	"
196,513 01		
1,768,617 09	= 9	"
196,513 01		
1,965,130 10	= 10	" proving correctness of table.

Then enumerate the various items as follows, working out the calculations as above shewn and using table when making division. The results are here given.

						Percentage of Sales.
Merchandise	133,936 74	x	100	+	196,518 01	= 68.16
Wages	26,151 69		"		"	= 13.30
Factory, Exs.	6,862 72		"		"	= 3.49
Insurance	752 99		"		"	= .38
Express Chgs.	165 32		"		"	= .09
Salaries	4,669 92		"		"	= 2.38
Telephone	126 17		"		"	= .06
Travelling Exs.	193 00		"		"	= .10
Advertising	394 27		"		"	= .20
Stationery	78 76		"		"	= .04
Cars	81 05		"		"	= .04
Postages	132 69		"		"	= .07
Sundries	41 44		"		"	= .02
Legal Exs.	45 00		"		"	= .02
Auditor	200 00		"		"	= .10
Comm. on Sales	3,466 96		"		"	= 1.77
Interest	4,437 92		"		"	= 2.26
Donations	172 28		"		"	= .09
Taxes	160 25		"		"	= .08
B. & D. Debts	3,430 46		"		"	= 1.75
Profit	11,013 38		"		"	= 5.60
	$196,513 01					100.00

DEPRECIATION.—Every Manufacturer should set aside a certain sum every year out of the Revenue Account, to provide for depreciation in plant, machinery buildings, etc. What this amount should be will depend upon the nature of these assets, and the amount of wear and tear they are exposed to. This matter of depreciation requires careful consideration, and if an arbitrary rate is fixed upon, it should be carefully verified every few years by a thorough valuation and fresh inventories taken. Every factory should keep a Machinery Register, in which all the machines are entered with their proper number, which number can be painted on the machine itself. When repairs or replacements are necessary, an order should be made out and a

record of this entered in the Machinery Register opposite the particular machine. This is very useful, not only to see that the machines are being properly cared for, but in some cases as a test of the machine itself. It is an obvious fact that a cheap machine is costly if endless repairs are required to keep it in running order. All repairs and displacements should be charged to Repairs Account. If this is done and the machines maintained in first-class order, a lower arbitrary rate of depreciation can be provided for.

It is unfortunately too often the case, that all replacements are charged to the Machinery Account, and this asset may be thus increased without any real corresponding value, and profits are shewn which are not earned.

There is another point which may be referred to. It is better to open a Machinery Account, the balance at which should agree with the total value of machines as entered in Machinery Register, and this balance should not be altered except when new machinery is bought or machinery sold. Each year credit to a Reserve Account the amount of depreciation decided upon, but do not deduct this depreciation from the machinery balance. In case of fire, the machine is worth to the Manufacturer what it would cost to replace it, not necessarily the amount in his books, and if he has been reducing its value year by year by writing off depreciation, and if the Ledger balances show a smaller figure than the amount claimed after a fire it leads to disputes and possibly litigation.

REMARKS ON ESTIMATING COST

There is also another matter which we think it is of importance to call attention to, which affects the methods used by a great many manufacturers who make up Lumber, Steel Plate, Leather and such like commodities into the manufactured article. In estimating the cost of such manufactured article the element of Waste has to be considered. Take a manufacturer in Lumber for instance; He is asked to put in a tender for supplying say 1,000 articles, which he figures will take 25 feet of Lumber each. The unit on which he will base his calculations will be 1,000 feet Board Measure of the particular kind, and he will base his price on so much per 1,000 feet, Board Measure, finished.

We will assume that he has satisfied himself as to the following facts:

1st. That the quantity of Lumber in each article is 25 feet.

2nd. That the Lumber in the rough is worth $20 per 1,000 feet.

3rd. That the cost of Manufacturing is $5 per 1,000 feet, including Indirect expenses.

4th. That the Waste in cutting up is 20% on the rough Lumber.

5th. That he wishes to get 25% profit on his selling price.

Having these facts before him, they may be figured in three ways—Unit 1,000 feet Board Measure. In shewing these comparative methods only the Material, the Waste, and the Labor are considered.

"A" METHOD:

Lumber	$20.00
Waste 20%	4.00
Labor	5.00
	29.00
Profit 25%	7.25
Total	35.25 per 1,000 feet.

Therefore, each article taking 25 feet of Lumber will be $36.25 \times \frac{25}{1,000} = 90$ 3-5 cents each.

"B" METHOD:

Lumber	$20.00
Labor	5.00
	25.00
Waste 20%	5.00
	30.00
Profit 33⅓	10.00
Total	40 00 per 1,000 feet, or $1 each article.

"C" METHOD:

Lumber	$20.00
Labor	5.00
	25.00

In the two former methods it has been overlooked that the percentage 20% of Waste is on quantity of rough Lumber used, and not on the quantity being valued in the estimate. For in-

stance—out of 1,000 feet of Lumber 800 is obtained. To obtain this 800 feet has cost $25.00, what is this then worth per 1,000 feet finished?

as 800 ft. : 1000 : : 25 : etc.

or $\frac{1,000 \times 25}{800} = \$31.25$ cost.

25% profit on selling price
equals 33⅓% on cost..... 10.41

Total, 41.66 per thousand feet,
or $1.04 each article.

It will surprise many of our readers to learn that a great many are to-day figuring their cost under Method "A."

METHOD "A" IS WRONG.

(1) In only adding Waste on the Lumber at 20%—overlooking the fact that the Labor must bear its share, and that out of 1000 ft. only 800 feet came out as manufactured.

(2) In falling into a common error that 25% on the cost is the same as 25% on selling price.

(3) That the Waste is not 200 feet on 1000 feet, but 200 feet for every 800 feet turned out, or 25% instead of 20%.

METHOD "B",

Is also, defective as regards percentage of Waste, though the other errors are avoided.

METHOD "C"

Shews the correct method.

PART III.

In the following pages we have endeavored to give some practical and useful forms of books and accounts. Some of the forms are original, but the Author's wish is to provide the Book keeper with forms which he can use with advantage and, moreover, with confidence. In some cases we have shewn alternate forms, advising when they should be used.

CHAPTER XIII.

CASH BOOK.

In Fig. No 56 is shewn a form of Cash Book, which is very simple—By charging all such items as interest, Wages, etc., to the Expense Column, and then detailing all the items in the Distribution Journal (See Fig. No. 5), much time can be saved in posting. The totals of all columns should be posted weekly or monthly excepting sundry accounts, which must be posted item by item to the Ledger. The headings to the various columns are of course not arbitrary.

Fig. No. 57 is a very useful form as it provides a Cash Column, and a ready means of balancing cash daily. The deposits are entered under heading "Bank" on the left side. Should the monies paid in be at once deposited they can be entered in Bank Column, if not enter them in "Cash," and when making deposit, charge "Cash" on right side and "Bank" on left side. The cheques are entered as provided for, and when necessary extended to special columns, e.g., Bills Payable. When payments are made in cash they are so entered.

Fig. No. 58.—When this Cash Book is used a special Journal is required for the Bank Cheques. Notes, etc. (Vide Fig. No. 59).

For a business using a large number of cheques, or keeping more than one banking account, this is probably the best system. This is essentially a Cash Book, and when all payments are made by cheques, excepting petty cash payments, which should be kept in a separate book, the only entries on the right hand side will be the bank deposits and exchange. The left-hand side can be ruled as required. In any Cash Book where it is required to separate the accounts into separate Ledgers, such as A to K and L to Z, it is generally wiser to keep a separate personal Cash Book and bring daily totals into General Cash Book. Provision would have to be made through all the books if separate Ledgers are kept and are to be balanced separately.

Fig. No. 60 shews form of Petty Cash Book which requires no explanation.

FIG. No. 56.

CASH BOOK.

Date	Particulars	Discount, etc.	Sundry Accounts	Bank Cheques, etc.	Cash Sales	Total

Date	Particulars	Discount	Sundry Accounts	Bank Deposits	Expense	Bills Payable	Total

FIG. No. 57.

CASH BOOK.

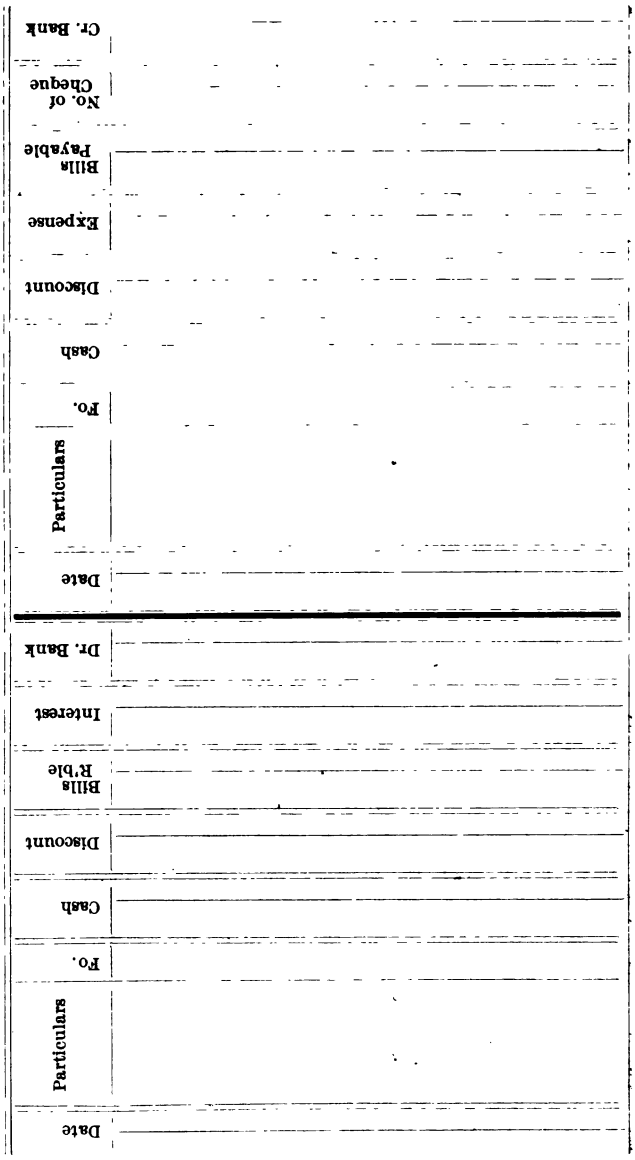


FIG. No. 58.

CASH BOOK.

Date	Particulars.	Fo.	Sundry Accounts	Dis-count	Cash Sales	Date	Particulars	Fo.	Exchange	Bank Deposit

FIG. No. 59

BANK JOURNAL.

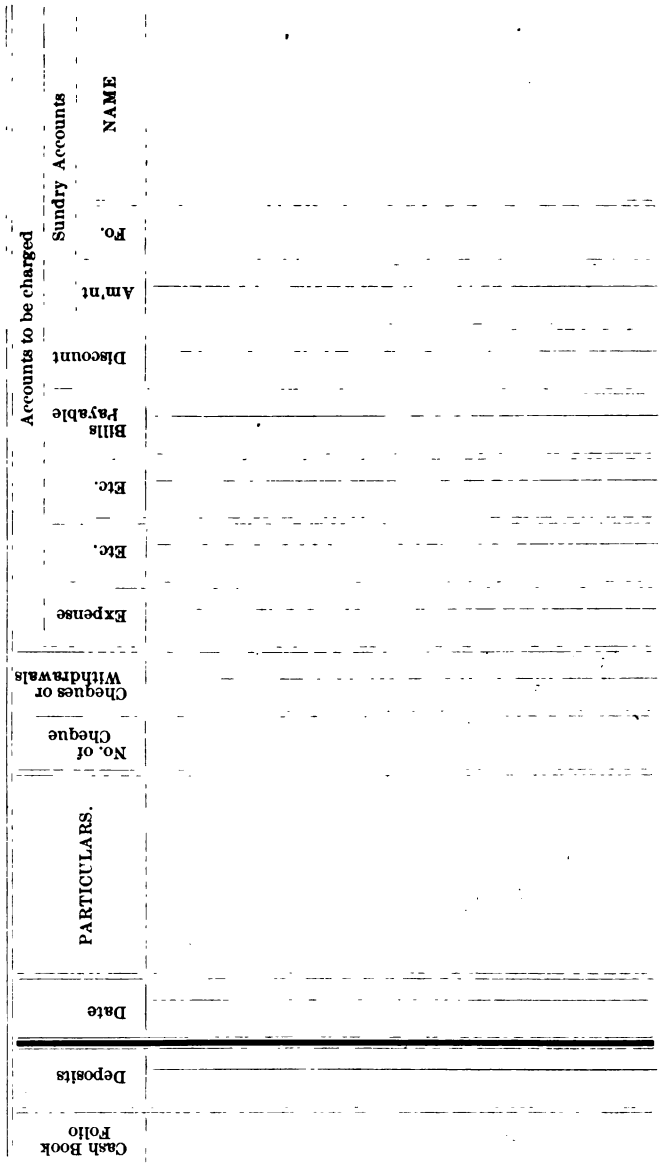


FIG. No. 60.

PETTY CASH BOOK.

12

Date		Amount Received	Date	Particulars	Payments	Postage	Cartage	Etc.	Etc.	Etc.	Etc.

PURCHASE JOURNAL., FIG NO. 61.

This book requires little explanation. The object of having the column "Freight in and Duty," is to enable this to be charged with the invoice to the proper department or account. To do this each invoice must be charged with the proper amount by means of a suitable stamp; and the cashier should be instructed to pass no such payments unless this is done. The total of this column is posted to the credit of account each month and should close or balance same.

Another method is to make a list of Accounts Payable in a book, credit all the merchants in the usual way to the debit of Purchases Account as the case may be. When this is done the invoices are charged to the proper departments through the Distribution Journal.

FIG. No. 61.

PURCHASE JOURNAL, OR BOUGHT INVOICE BOOK.

Date	No. of Invoice	Particulars	Fo.	Invoices Detail	Totals Invoices	Freight in and Duty	Accounts to be charged		Sunds.	Fo.	Particulars of Sunds. account

FIG. No. 62.

PURCHASES RETURNED.

Date	From whom Bought	Folio	Am'nt	Department to be Credited			

FIG. No. 63.

SALES RETURNED.

Date	Customers to be Credited.	Folio	Am'nt	Department to be Charged.		

DISTRIBUTION JOURNAL.

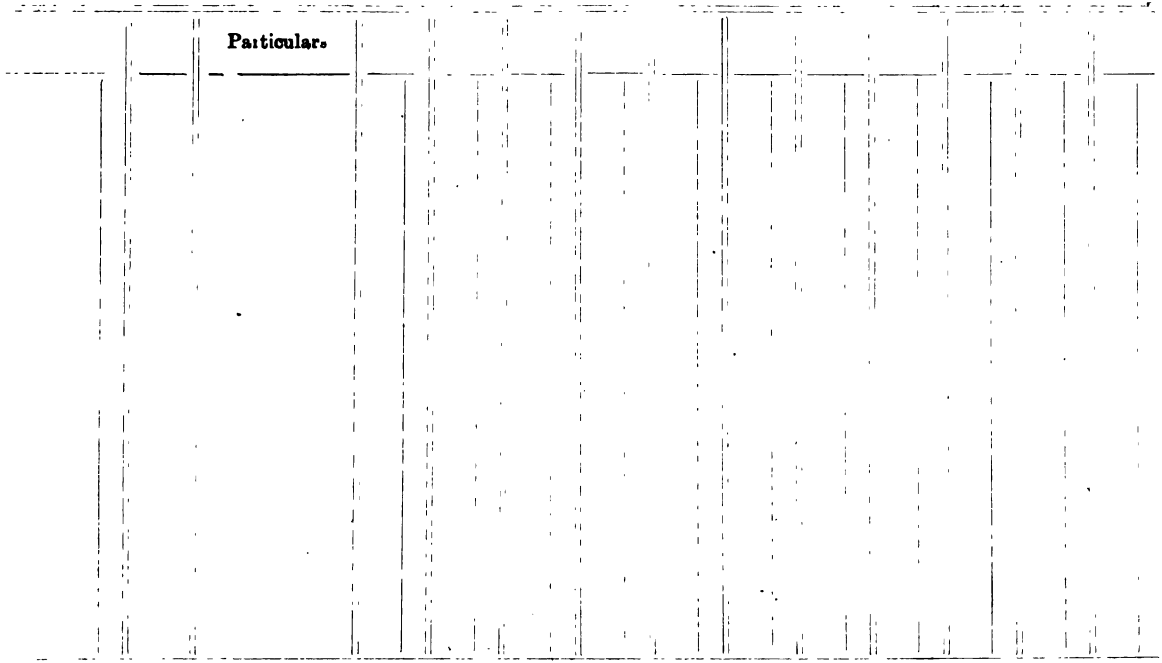
This is a most useful book, as it enables totals only to be posted in the Ledger, and yet provides for the fullest details being kept.

Supposing one account "Expense" is kept in the Ledger this book will shew details of all items, and headings can be further subdivided if necessary. Supposing such items as Wages, Discount, Interest, have been kept under this heading "Expense" to save extra columns in the Cash Book, periodically the totals of such items can be charged to their proper accounts and credited "Expense" account.

In a business where there are a number of departments it is far better to shew details in this book than to open a number of accounts in the General Ledger.

FIG. No. 64.

DISTRIBUTION JOURNAL.



BILLS PAYABLE BOOK.

The form shewn in Fig. No. 65 is far simpler than the form commonly used. The due date is kept in one column. In practical business a diary or "tickler" is generally kept, so this gives the required information. For posting, the form given is far preferable, as the account and the amount to be charged are close together.

Where two Personal Ledgers are kept, the column headed "Amount" should be supplemented with another column heading, one A to K and the other L to Z, as the case may be. It is a comparatively simple matter to balance A to K Ledger by itself, if you trace and provide for all debits being under a column A to K, and similarly with all credits. By grouping all these items together monthly the correct balance can be readily arrived at.

The same remarks apply to Fig. No. 66, Bills Receivable Book.

FIG. No. 65.

BILLS PAYABLE BOOK.

Date Issued	To whom paid	Fo.	Amount	Discount	Date of Bill	Term	Due Date	Remarks—Other names to bill (if any), &c.

FIG. No. 66.

BILLS RECEIVEABLE BOOK.

Date Received	From whom Received	Fo.	Amount	Discount	Date of Bill	Term	Due Date	Remarks-where payable, other names to bill (if any)-when discounted or paid &c.

FIG. No. 67.—COLUMNAR LEDGER ACCOUNT.

In businesses where there are two or three departments, this is a very convenient way of keeping certain accounts. For example "Sales Account." This account will give the total sales of each department all kept together in one account, instead of being posted to three accounts as is often done.

This form of keeping certain accounts is worthy the attention of all book-keepers.

FIG. No. 67.

COLUMNAR LEDGER ACCOUNT.

Dr. *Cr.*

Date	Particulars	Fo.	Total	Dept. A	Dept. B	Dept. C	Date	Particulars	Fo.	Total	Dept. A	Dept. B	Dept. C

BALANCE SHEET—FIG. No. 68.

Shewing a form of Balance Sheet. It is a matter of opinion as to whether the Liabilities should be placed on the left side or the right. The leading accountants in England and Canada as a rule adopt form as shewn.

FIG. No. 68.

BALANCE SHEET.

of the as on

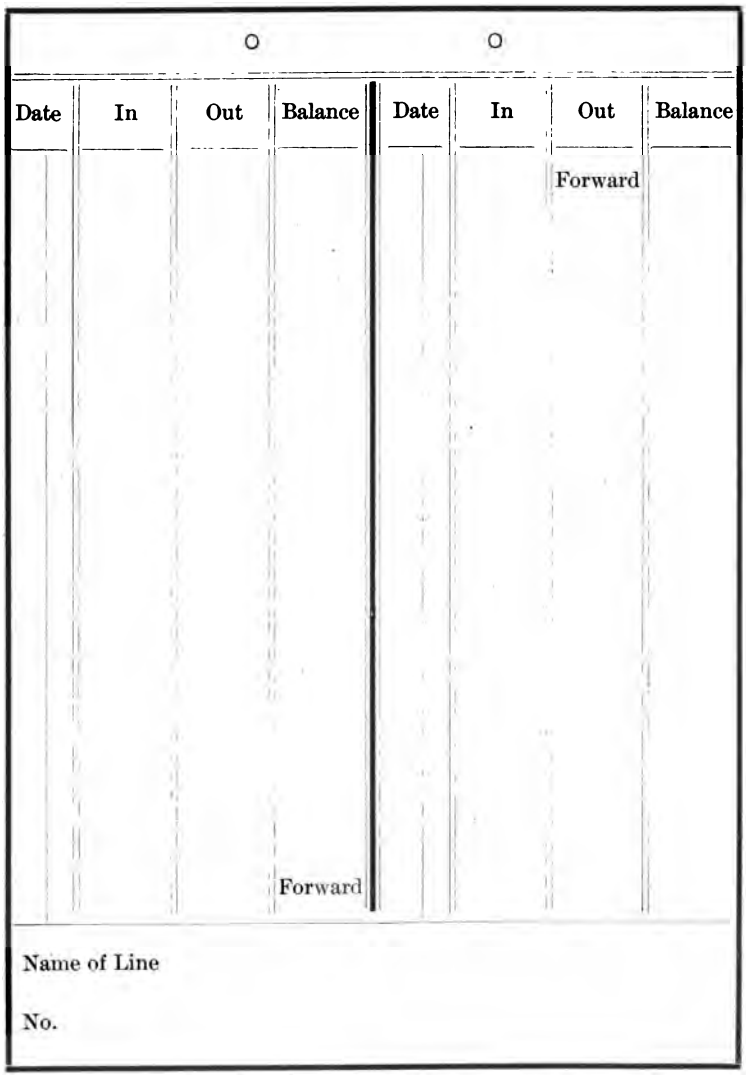
LIABILITIES.			ASSETS.		
TO TRADE CREDITORS.			**CASH.**		
On Bills Payable			On hand		
On Open Account			In Bank		
SUNDRY CREDITORS.			**TRADE DEBTORS.**		
On Open Account			On Bills Receivable		
Secured			On Open Account		
Unsecured			On Overdue Bills if not charged to Account		
On Bills Payable			**SUNDRY DEBTORS.**		
PROVISIONS MADE.			Secured		
For such Accounts as Wages Accrued due, etc.			Unsecured		
RESERVE FUND.			**MERCHANDISE.**		
Set aside out of profits, and either specially invested or included amongst the general Assets. This Fund is not intended to be touched			Raw Material		
			Stores		
			Manufactured goods		
			Partly Manufactured goods		
RESERVE ACCOUNTS.			**MACHINERY AND PLANT.**		
Set aside out of profits for such purposes as Depreciation in Buildings, Machinery, etc			Machinery		
			Plant		
			Furniture and Fittings		
For any special Contingency			**PROPERTY AND REAL ESTATE.**		
PROFIT AND LOSS ACCOUNT.			Land — Freehold or Leasehold		
Being balance at credit of account at end of financial period			Buildings		
			Improvements		
INDIRECT LIABILITIES.			**OTHER ASSETS.**		
This item is usually not extended into the balance-sheet, and includes such items as—			Such as—Insurance Paid for in period and unearned		
			Interest due, if any, etc., etc		
Liability on Bills discounted			**MEMO—**		
Liability as Guarantor.			From item Trade Debtors deduct provision for Bad and Doubtful debts		
Liability on Disputed Claims, etc					
CAPITAL STOCK ACCOUNT.					
Under this heading should be shown—					
Capital Stock Authorized					
Capital Stock Subscribed					
Capital Stock Paid in					

STOCK SHEET—FIG. No. 69.

Fig. No. 69 shews a form by which the transactions in each line of goods is recorded. Where these lines are not very numerous, these sheets or cards can be entered daily, and a complete record kept of the turnover and also the balance on hand in any one line. This is a most useful system, as these sheets can be arranged alphabetically on a file. The cost price of each line can be recorded at foot, and thus gross profits are easily estimated if wished.

FIG. No. 69.

STOCK SHEET.



Where a business has agencies, by having daily reports sent in a complete record can be kept at the Head Office of their stock, etc. A form of daily report is here shewn in Fig. No. 70, which explains itself.

There would be, of course, a set of Stock Sheets kept at the Agency, and a duplicate set at the Head Office would be written up from the daily report and the balance on hand checked therewith. This is thoroughly practical, even if the lines sold number over two thousand, as the lines can be arranged according to names and also to numbers. The forms shewn are in actual use. Only quantities are therein dealt with, not values, which are recorded elsewhere. The forms shewn are very simple, and further particulars can be recorded if required.

When goods are added to stock by the agent, or sent by Head Office, same are charged under column "In," and advice duly sent, always advising " Balance on hand."

FIG. NO. 70.

DAILY REPORT OF SALES.

To be used in conjunction with Fig. No. 69. To this sheet, agent should attach copies of invoices.

Date	No.	Q'ntity Sold	Balance on hand	Name of Line	To Whom sold	Amount

SALES BOOK—FIG. No. 71.

Where it is required to record the average selling price of certain lines of goods, such as Shingles, Flour, etc., this form of book is very convenient, and by keeping the Ledger Account in similar form the average can be obtained at the end of the year.

FIG. NO. 71.

SALES BOOK.

To show average selling prices—Where practicable.

Date	Particulars	Fo.	Total	Class "A"		Class "B"		Class "C"	
				Quantity	Amount	Quantity	Amount	Quantity	Amount

C. O. D. SALES REGISTER—FIG. No. 72.

Where there are a number of C.O.D. sales this is a useful practical form.

As each sale is made it is entered on Invoice and these should when possible bear consecutive numbers. If the package is charged for it is included in the account to be collected. The right-hand side provides for packages returned and allowances. The summary of the three Cr. columns will balance with the Total column and this amount has to be accounted for by cash and returns.

At the end of the month if there are any outstandings the book should be ruled off bringing down balance of these outstandings under the cash received and carrying same balance forward to Cr. Total column, subdividing same into departments, etc. A form similar to this can be used to record cash sales, when packages, etc., are charged—a Freight column can also be added if necessary.

FIG. No. 72. C. O. D. SALES REGISTER.

No.	Date	Cr. Packages	Cr. Dept. A	Cr. Dept. B	Total	Purchaser	Carter	Cash	Dr. Packages	Dr. Allowances Dept. A	Dr. Allowances Dept. B

FORM OF MONTHLY STATEMENT—FIG. No. 73.

Every manufacturer should have rendered him each month a statement shewing him the transactions of his business, as well as his position as regards his Liabilities and and the Assets wherewith to pay them. Such a statement as shewn here not only gives this information, but if kept up regularly provides a comparative record which is very valuable. Every factory should keep a record of its output, as by so doing it affords a check at the end of the year on the valuations, more or less estimated, which have been placed thereon when sent into the warehouse.

A form with somewhat different headings should be drawn up monthly in all businesses.

FIG. No. 73 FORM OF MONTHLY STATEMENT.

	Purchases		Wages		Factory Expenses		Output from Factory		Sales		General Expenses.	Liability Bills Payable	Liability Trade Creditors	Liability Other Creditors	Assets Bills Rec'able	Assets Trade Debtors.	Assets Cash
	Dept. A	Dept. B	Dept. A	Dept. B	Dept. A	Dept. B	Dept. A	Dept. B	Dept. A	Dept. B							
January																	
February																	
March																	
1st Quar.																	
April																	
May																	
June																	
2nd Quar.																	